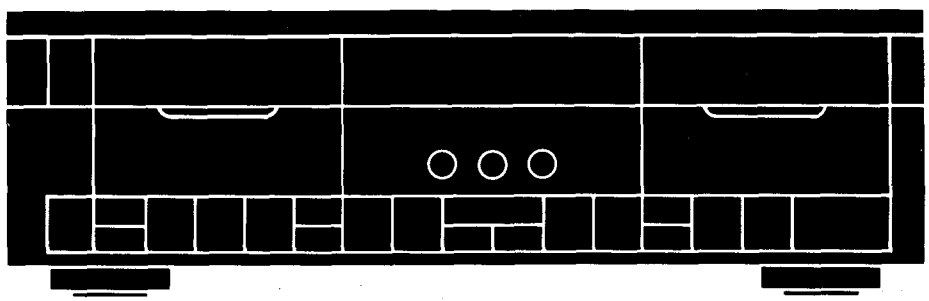
The Harman Kardon Model DC5300

Manual 177A

DUAL CASSETTE DECK

Technical Manual



The following marks found in the parts list of this manual identify the models as follows.

BK : North America area model Black version
IB : International model Black version
BB : Australia model Black version

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harman/kardon

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1112-0010A152 P-129109 2000 Printed in Japan

SPECIFICATIONS

		Nominal	Limit
Track Configuration		4-track 2 Channel Stereo Cassette Deck	
• MECHANICAL SECTION			
Record/Playback Tape Speed Drift 4.75 cm/sec.		0.2% ≦ 2.0%	
Heads (Primary/Secondary)		2/1	
Wow and Flutter	NAB	0.05% ≦ 0.1%	
	CCIR	0.08%	
Take Up Torque		50 gr.cm	35 – 70 gr.cm
Back Tension		2 gr.cm	2 – 6 gr.cm
F.FWD Torque		100 gr.cm	70 – 150 gr.cm
Rew Torque		100 gr.cm	70 – 150 gr.cm
F.FWD/Rew Time (C-60 Tape)		85 sec.	≦ 100 sec.
• AMPLIFIER SECTION			
Record/Playback Frequency Response (at -3 dB)	LN	20 – 18 kHz	20 – 17 kHz
	CrO_2	20 – 18 kHz	20 – 17 kHz
	Metal	20 – 18 kHz	20 – 17 kHz
Copy Mode Frequency Response	LN	40 – 16 kHz	40 – 15 kHz
	CrO_2	40 – 16 kHz	40 – 15 kHz
	Metal	40 – 16 kHz	40 – 15 kHz
Bias Frequency		105 kHz ±5 kHz	
Playback Output		620 mV ±1.5 dB	
Signal-to-Noise Ratio (at Line Input) (Input 1 kHz, 100 mV) IHF-A WTD (at Dolby level)			
Dolby NR off	LN	51 dB	
	CrO_2	54 dB	
	Metal	54 dB	
Dobly B NR	LN	61 dB	
	CrO_2	64 dB	≧ 60 dB
	Metal	64 dB	≧ 60 dB

		Nominal	Limit
Dolby C NR	LN	66 dB	
	CrO_2	70 dB	≧ 66 dB
	Metal	70 dB	≧ 66 dB
Channel Separation		45 dB	≧ 35 dB
Crosstalk		70 dB	≧ 60 dB
Record/Playback Distortion (Input 1 kHz)			
	LN	0.9%	≦ 2.0%
	CrO_2	1.3%	≦ 3.0%
	Metal	1.1%	≦ 2.0%
MPX Filter Attenuation			
at 15 kHz		0.3 dB	≦ 1 dB
at 19 kHz		35 dB	≧ 30 dB
Erase Ratio (Input 80 Hz)			
	LN	70 dB	≧ 60 dB
	Metal	61 dB	≧ 56 dB
Input Sensitivity (Input 1 kHz) at Line Input		43 mV	30 – 80 mV
Input Impedance (Input 1 kHz) at Line Input		23 kΩ	15 – 25 kΩ
• DIMENSIONS (WxHxD)		17-3/8" x 5" x 12-5/8" (443 x 134 x 342) mm	
• WEIGHT		17.2 lbs (7.8 kg)	
• POWER SUPPLY			
U.S.A. and Canada models		AC120V, 60 Hz	
International model		AC230V/240V, 50/60 Hz	
• POWER CONSUMPTION			
U.S.A. and Canada models		29 W	
International model		31 W	

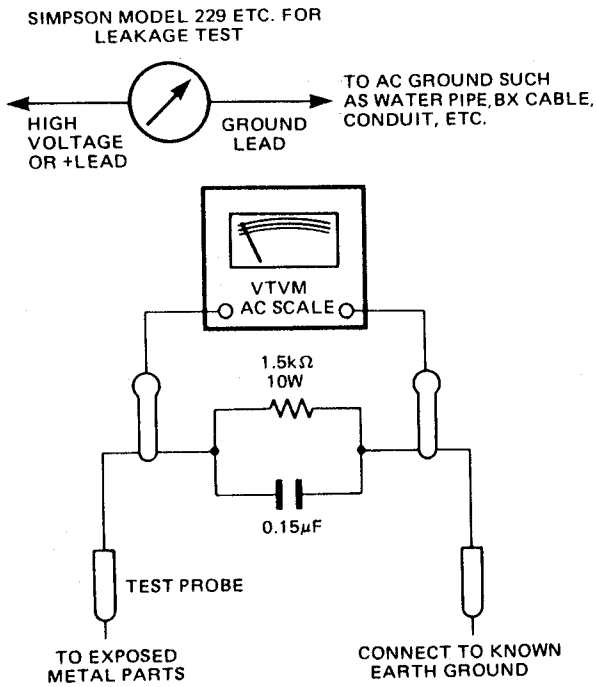
These specifications are service target specs.
Specifications and components are subject to change without notice.
Overall performance will be maintained or improved.

LEAKAGE TEST (FOR SERVICE ENGINEERS IN THE U.S.A)

Before returning the unit to the user, perform the following safety checks:

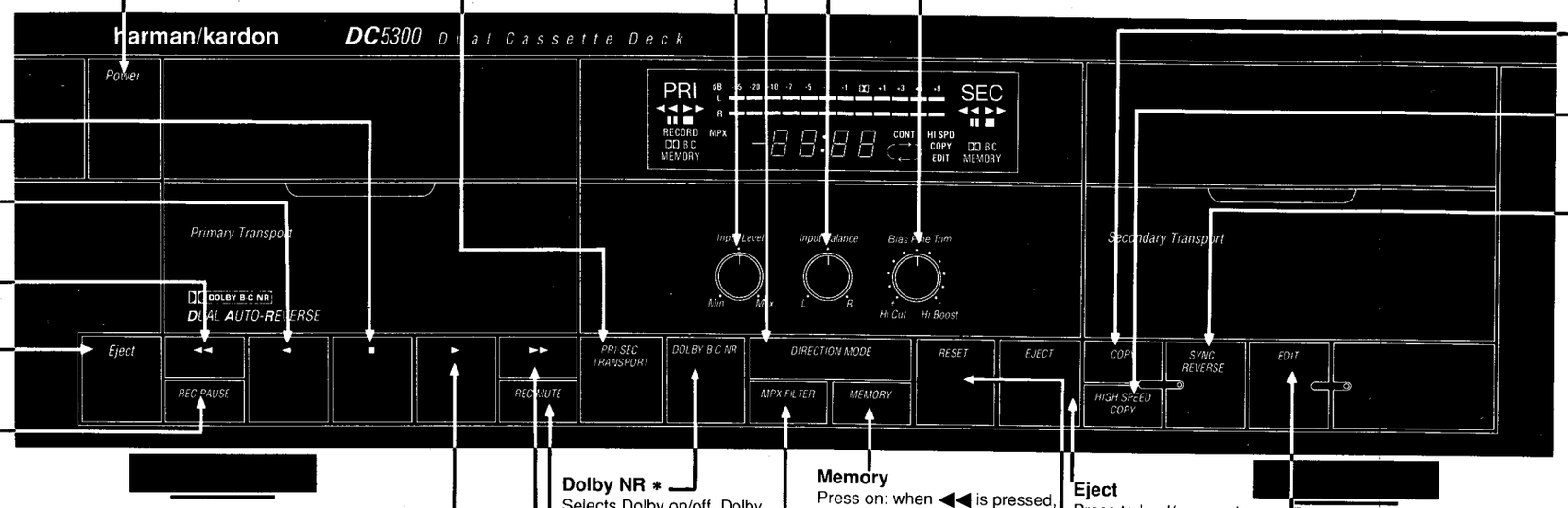
1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Replace all protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, or shields, isolation resistorcapacitor networks, mechanical insulators, etc.
3. Be sure that no shock hazard exists; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows:

Plug the AC line cord directly into a 120-volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 ohm, 10-watt resistor paralleled by a 0.15mF capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor.(See Diagram.) Move the reisistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the power switch in both the On and Off positions.)



A reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.

CONTROLS AND FUNCTIONS



Power Switch
Press to turn unit on/off.

PRI/SEC Transport Selector
Selects which transport (either Primary or Secondary) is to be operated by the transport controls.

Direction Mode
Selects one way, reverse, or continuous transport mode.

Input Level
Adjusts recording level.

Input Balance
Adjusts recording balance of left and right channels.

Fine Trim
Adjust when recording.

Stop
Stops tape movement.

Reverse Play
Begins playback or recording in reverse direction.

Rewind
Rapidly rewinds tape.

Eject
Press to load/remove tape cassette in Primary transport.

Rec/Pause
Puts cassette deck in Record-ready or Pause mode.

Play
Begins playback or recording.

Fast Forward
Rapidly advances tape.

Rec Mute
Inserts blank space when recording.

Dolby NR *
Selects Dolby on/off, Dolby B mode, or Dolby C mode.

MPX Filter
Press when using Dolby noise reduction while recording FM stereo broadcasts.

Memory
Press on: when ◀◀ is pressed, tape rewinds to approximately 00:00 on Counter.

Reset
Resets Counter to 00:00.

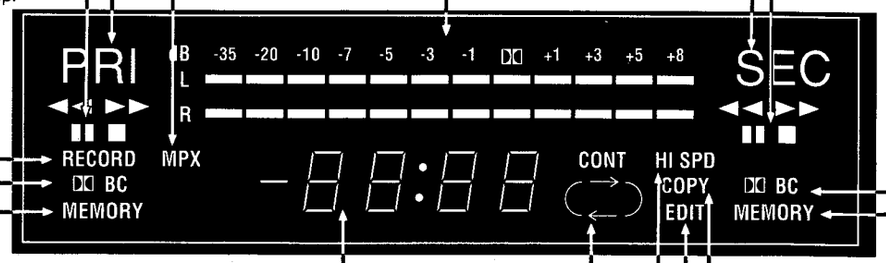
Eject
Press to load/remove tape cassette in Secondary transport.

Copy
Press to begin automatic copying procedure.

Hi-Speed Copy
Press to begin automatic high speed copying procedure.

Sync Reverse
Activates automatic synchronized reverse copying in Copy and Hi-Speed Copy modes.

Edit
Press to begin Edit mode.



PRI
Illuminates when Primary tape transport is currently operated by the transport controls.

◀◀ ▶▶ ▮▮ ■
Displays operating mode of transport: Record, Forward Play, Reverse Play, Fast Forward, Rewind, Pause, Stop.

RECORD
Illuminates when transport is in Record mode.

BC
Illuminates if Dolby B or C circuits are on.

MEMORY
Indicates Memory is engaged.

MPX
Indicates MPX Filter is engaged.

LEVEL
Shows signal level.

SEC
Illuminates when Secondary tape transport is currently operated by the transport controls.

◀◀ ▶▶ ▮▮ ■
Displays operating mode of transport: Record, Forward Play, Reverse Play, Fast Forward, Rewind, Pause, Stop.

BC
Illuminates if Dolby B or C circuits are on.

MEMORY
Indicates Memory is engaged.

TRANSPORT MODE
Indicates transport mode: one way, auto reverse, continuous.

00:00
Indicates tape position in minutes and seconds.

COPY
Indicates unit is in Copy mode.

EDIT
Indicates unit is in Edit mode.

HI SPD
Indicates unit is in High Speed Copy mode.

*** NOTE**
Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

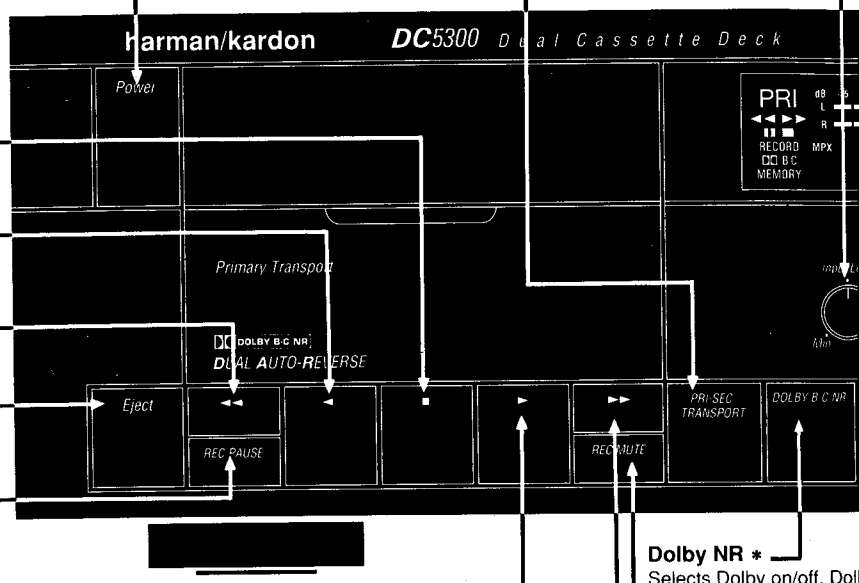
CONTROLS AND FUNCTIONS

Direction Mode
Selects one way, reverse, or continuous transport mode.

Input Level
Adjusts recording level.

Power Switch
Press to turn unit on/off.

PRI/SEC Transport Selector
Selects which transport (either Primary or Secondary) is to be operated by the transport controls.



Stop
Stops tape movement.

Reverse Play
Begins playback or recording in reverse direction.

Rewind
Rapidly rewinds tape.

Eject
Press to load/remove tape cassette in Primary transport.

Rec/Pause
Puts cassette deck in Record-ready or Pause mode.

Play
Begins playback or recording.

Fast Forward
Rapidly advances tape.

Rec Mute
Inserts blank space when recording.

Dolby NR *
Selects Dolby on/off, Dol
B mode, or Dolby C mod

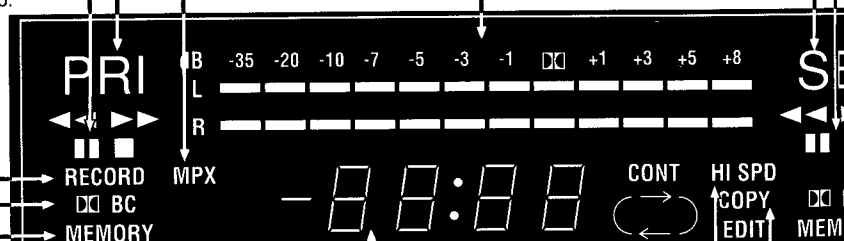
MPX Filter
Press when using Dolby reduction while recording stereo broadcasts.

PRI
Illuminates when Primary tape transport is currently operated by the transport controls.

◀◀ ▶▶ ❚❚ ■
Displays operating mode of transport: Record, Forward Play, Reverse Play, Fast Forward, Rewind, Pause, Stop.

MPX
Indicates MPX Filter is engaged.

LEVEL
Shows signal level.



RECORD
Illuminates when transport is in Record mode.

B C
Illuminates if Dolby B or C circuits are on.

MEMORY
Indicates Memory is engaged.

TRANSPORT MODE
Indicates transport mode: one way, auto reverse, continuous.

00:00
Indicates tape position in minutes and seconds.

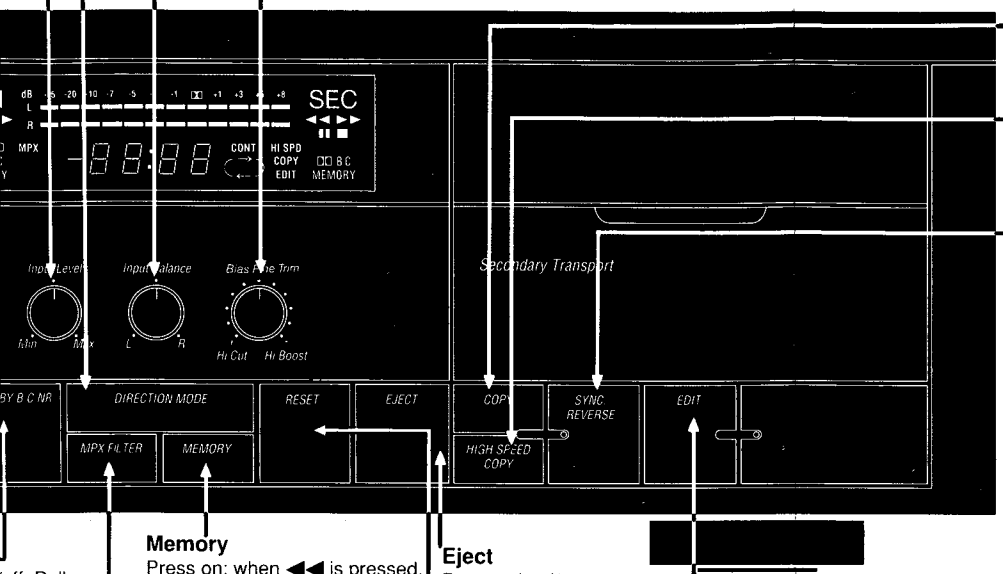
COPY
Indicates mode.

EDIT
Indicates uni
Edit mode.

HI SPD
Indicates unit is
Speed Copy mo

Input Balance
Adjusts recording balance of left and right channels

Fine Trim
Adjust when recording.



Copy
Press to begin automatic copying procedure.

Hi-Speed Copy
Press to begin automatic high speed copying procedure.

Sync Reverse
Activates automatic synchronized reverse copying in Copy and Hi-Speed Copy modes.

Memory
Press on: when ◀◀ is pressed, tape rewinds to approximately 00:00 on Counter.

Eject
Press to load/remove tape cassette in Secondary transport.

Reset
Resets Counter to 00:00.

Edit
Press to begin Edit mode.

off, Dolby
C mode.

Dolby noise
ecording FM
s.

SEC
Illuminates when Secondary tape transport is currently operated by the transport controls.

◀◀ ▶▶ ▮▮ ■
Displays operating mode of transport: Record, Forward Play, Reverse Play, Fast Forward, Rewind, Pause, Stop.

B C
Illuminates if Dolby B or C circuits are on.

MEMORY
Indicates Memory is engaged.

OPY
licates unit is in Copy
ode.

tes unit is in
node.

unit is in High
opy mode.

*** NOTE**
Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

DISASSEMBLY PROCEDURES (REFER TO PAGE 9, 10 and 11)

[1] TOP COVER (133) REMOVAL

Remove 4 screws (A) and 2 screws (B), and then remove the Top Cover(133).

[2] FRONT PANEL ASSEMBLY (AA) REMOVAL

1. Remove the Top Cover (133).
2. Disconnect 1 connector (JL901) from (CN904) on the Main P. C. Board (PCB-1).
3. Remove 6 screws (C) and 3 screws (D), and the remove the Front Panel Assembly (AA).
4. If necessary, unsolder the lead wires.

[3] CASSETTE TAPE RECORDER MECHANISM ASSEMBLY (103) REMOVEL

1. Remove the Front Panel Assembly (AA). (Refer to Step 2.)
2. Disconnect 4 connectors (LCN101/351, LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board (103).
3. Remove 4 screws (E), and then the Cassette Tape Recorder Mechanism Assembly (103).

[4] CASSETTE TAPE PLAYER MECHANISM ASSEMBLY (104) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to Step 2).
2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (104).
3. Remove 4 screws (F), and then the Cassette Tape Player Mechanism Assembly (104).

[5] MAIN P. C. BOARD (PCB-1) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (103).
3. Disconnect 4 connectors (LCN101/351, LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board (104).
4. Disconnect 5 Jumper Leads (JL1, JL2, JL3, JL4 and JL5) from 5 connectors (CN805, CN804, CN803, CN802 and CN801) on the Power P. C. Board (PCB-4).
5. Remove 9 screws (G), 1 screw (H) and 2 screws (I) and then remove the Main P. C. Board (PCB-1).

[6] POWER P. C. BOARD (PCB-4) REMOVAL

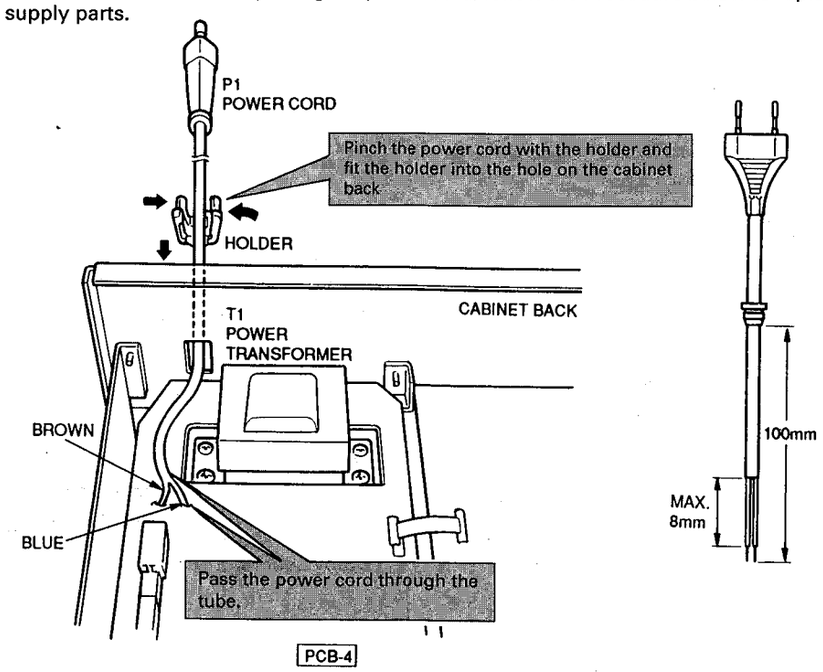
1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Disconnect 5 Jumper Leads (JL1, JL2, JL3, JL4 and JL5) on the Power P. C. Board (PCB-4).
3. Disconnect 3 connectors (LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board.
4. Remove 5 screws (J) and 4 screws (K), and then remove the Power P. C. Board (PCB-4).

[7] OTHER P.C. BOARDS REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Remove 4 screws (L), and then remove the Cont SW-L P. C. Board (PCB-7).
3. Remove 3 screws (M), and then remove the Cont SW-R P. C. Board (PCB-6).
4. Remove 3 Rotary Knobs (146) and 3 screws (N), and then remove the Volume P. C. Board (PCB-2).
5. Remove 7 screws (O), and then remove the Front P. C. Board (PCB-5).

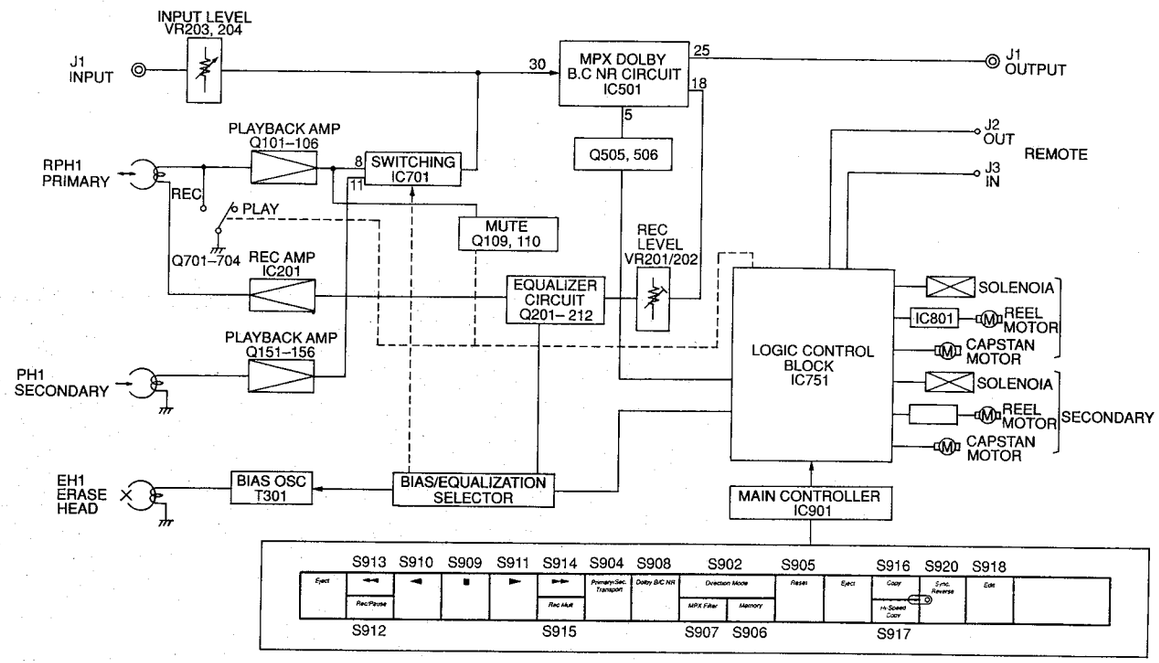
POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)

In order to prevent fire shock hazard when replacing the power cord, follow the Procedure below to replace the part with the standard supply parts.



PCB-4

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

PLAYBACK SIGNAL

The signal from the playback head (Primary Transport) is amplified by the playback amplifier Q101, Q103 and Q105 (L ch.), and is applied to the pin 29 (L ch.) and 2 (R ch.) of the Dolby NR IC501 (B/C type) through the Switching IC701. Use the same signal for both the secondary transport and the primary transport. Switching of the playback signal from the record mode (external input signal) to the playback mode is performed inside IC501.
IC501 is usually switched to the playback mode. However, the control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the record mode to the playback mode. The input signal to IC501 is output from the pins 25 (Lch.) and 6 (R ch.) and applied to the OUTPUT AMP.

RECORD SIGNAL

The signal from the INPUT jack is controlled by the INPUT LEVEL control. It is applied to the pins 30 (L ch.) and 1 (R ch.) of the Dolby NR IC501 (B/Ctype). Switching of the record signal from the playback mode to the record mode is performed inside IC501. The control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the playback mode to the record mode.
The input signal to the Dolby NR IC is output from the pins 28 (L ch.) and 3 (R ch.) of IC501 and passed through the MPX filter. Then it is input to the pins 27 (Lch.) and 4 (R ch.) and is output from the pins 24 (L ch.) and 7 (R ch.). The encoded signal is input to the pins 23 (L ch.) and 8 (Rch.) and then it is output from the pins 18 (Lch.) and 13 (R ch.). The signal output from IC501 passes through the record equalizer circuit and is amplified by the record amplifier of IC201. The amplified signal is then applied to the recording head after being synthesized by a bias signal.

MUTING OPERATION

The signal that mutes the sound produced at switching to recording or playback is applied from IC751 of the logic control block.
When the "STOP" button is pressed, the mute signal output from the pin 22 of IC751 turns ON Q709 (L ch.) and Q710 (R ch.) to short-circuit the output signals of the playback amplifiers for muting. For the purpose of preventing generation of noise at power ON/OFF, the mute signal is output from Q51. The muting is done by short circuiting the output signal with Q709 (L ch.) and Q710 (R ch.) turned ON.

LOGIC FOR RECORD MODE

When the "REC" button is pressed, the pin 11 of IC751 becomes high level and Q109 (L ch.) and Q110 (R ch.) turn ON. The input to the Dolby NR IC is muted. Also Q712 and Q713 turn ON and Q711 turns OFF. Therefore Q701, Q703 (L ch.) and Q702, Q704 (R ch.) turn OFF to release the muting of the outputs from the record amplifiers.
Also, Q505 turns ON and Q506 turns OFF to make the pin 5 of IC501 high level. Therefore the mode is switched to the record mode.

LOGIC FOR RECORD TO PLAYBACK MODE

When the "STOP", "PAUSE" or "PLAY" button is pressed, the pin 12 of IC751 becomes high level. Q219 turns ON and Q213 (L ch.), Q214 (R ch.) turn ON to mute the inputs to the record amplifiers. Also, Q712 and Q713 turn OFF and Q711 turns ON to turn ON Q701, Q703 (L ch.) and Q702, Q704 (R ch.). Therefore the outputs from the record amplifiers are muted.
Also, Q505 turns OFF and Q506 turns ON to make the pin 5 of IC501 low level. Therefore the mode is switched to the playback mode.

DISASSEMBLY PROCEDURES (REFER TO PAGE 9, 10 and 11)

[1] TOP COVER (133) REMOVAL

Remove 4 screws (A) and 2 screws (B), and then remove the Top Cover(133).

[2] FRONT PANEL ASSEMBLY (AA) REMOVAL

1. Remove the Top Cover (133).
2. Disconnect 1 connector (JL901) from (CN904) on the Main P. C. Board (PCB-1).
3. Remove 6 screws (C) and 3 screws (D), and the remove the Front Panel Assembly (AA).
4. If necessary, unsolder the lead wires.

[3] CASSETTE TAPE RECORDER MECHANISM ASSEMBLY (103) REMOVEL

1. Remove the Front Panel Assembly (AA). (Refer to Step 2.)
2. Disconnect 4 connectors (LCN101/351, LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board (103).
3. Remove 4 screws (E), and then the Cassette Tape Recorder Mechanism Assembly (103).

[4] CASSETTE TAPE PLAYER MECHANISM ASSEMBLY (104) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to Step 2).
2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (104).
3. Remove 4 screws (F), and then the Cassette Tape Player Mechanism Assembly (104).

[5] MAIN P. C. BOARD (PCB-1) REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Disconnect 4 connectors (LCN151, LCN806, LCN807 and LCN808) on the Secondary Transport P. C. Board (103).
3. Disconnect 4 connectors (LCN101/351, LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board (104).
4. Disconnect 5 Jumper Leads (JL1, JL2, JL3, JL4 and JL5) from 5 connectors (CN805, CN804, CN803, CN802 and CN801) on the Power P. C. Board (PCB-4).
5. Remove 9 screws (G), 1 screw (H) and 2 screws (I) and then remove the Main P. C. Board (PCB-1).

[6] POWER P. C. BOARD (PCB-4) REMOVAL

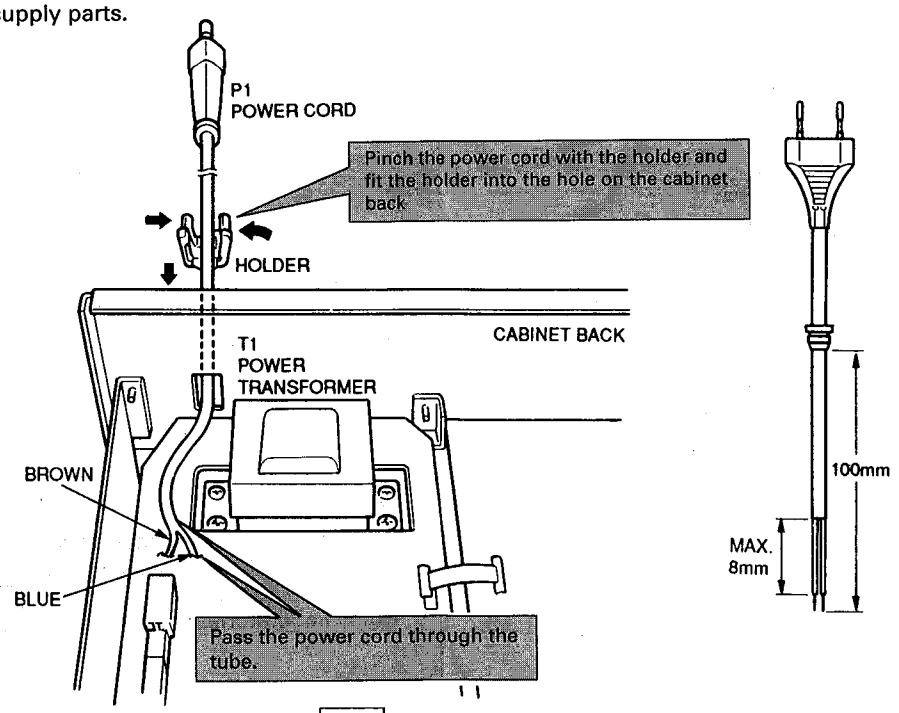
1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Disconnect 5 Jumper Leads (JL1, JL2, JL3, JL4 and JL5) on the Power P. C. Board (PCB-4).
3. Disconnect 3 connectors (LCN801, LCN802 and LCN803) on the Primary Transport P. C. Board.
4. Remove 5 screws (J) and 4 screws (K), and then remove the Power P. C. Board (PCB-4).

[7] OTHER P.C. BOARDS REMOVAL

1. Remove the Front Panel Assembly (AA). (Refer to step 2).
2. Remove 4 screws (L), and then remove the Cont SW-L P. C. Board (PCB-7).
3. Remove 3 screws (M), and then remove the Cont SW-R P. C. Board (PCB-6).
4. Remove 3 Rotary Knobs (146) and 3 screws (N), and then remove the Volume P. C. Board (PCB-2).
5. Remove 7 screws (O), and then remove the Front P. C. Board (PCB-5).

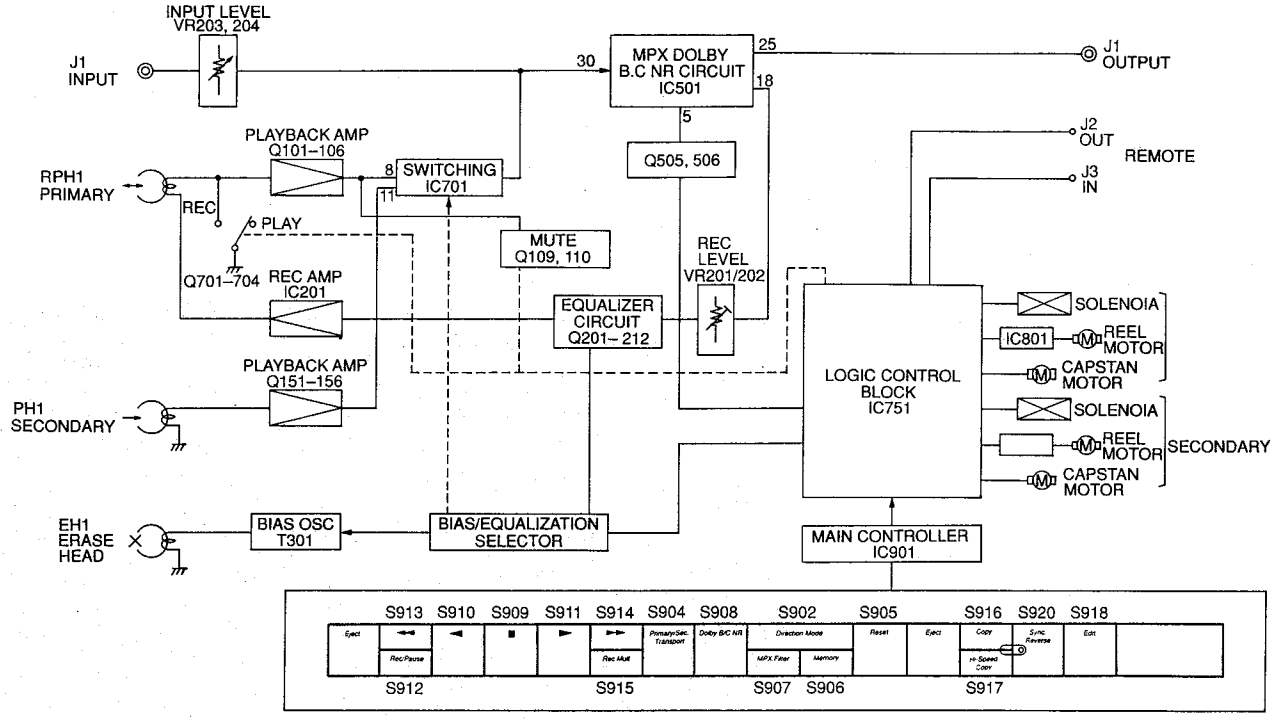
POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)

In order to prevent fire shock hazard when replacing the power cord, follow the Procedure below to replace the part with the standard supply parts.



PCB-4

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

PLAYBACK SIGNAL

The signal from the playback head (Primary Transport) is amplified by the playback amplifier Q101, Q103 and Q105 (L ch.), and is applied to the pin 29 (L ch.) and 2 (R ch.) of the Dolby NR IC501 (B/C type) through the Switching IC701. Use the same signal for both the secondary transport and the primary transport. Switching of the playback signal from the record mode (external input signal) to the playback mode is performed inside IC501.

IC501 is usually switched to the playback mode. However, the control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the record mode to the playback mode. The input signal to IC501 is output from the pins 25 (Lch.) and 6 (R ch.) and applied to the OUTPUT AMP.

RECORD SIGNAL

The signal from the INPUT jack is controlled by the INPUT LEVEL control. It is applied to the pins 30 (L ch.) and 1 (R ch.) of the Dolby NR IC501 (B/Ctype). Switching of the record signal from the playback mode to the record mode is performed inside IC501. The control signal transmitted to the pin 5 of IC501 from IC751 through Q505 and Q506 switches IC501 from the playback mode to the record mode.

The input signal to the Dolby NR IC is output from the pins 28 (L ch.) and 3 (R ch.) of IC501 and passed through the MPX filter. Then it is input to the pins 27 (Lch.) and 4 (R ch.) and is output from the pins 24 (L ch.) and 7 (R ch.). The encoded signal is input to the pins 23 (L ch.) and 8 (Rch.) and then it is output from the pins 18 (Lch.) and 13 (R ch.). The signal output from IC501 passes through the record equalizer circuit and is amplified by the record amplifier of IC201. The amplified signal is then applied to the recording head after being synthesized by a bias signal.

MUTING OPERATION

The signal that mutes the sound produced at switching to recording or playback is applied from IC751 of the logic control block.

When the "STOP" button is pressed, the mute signal output from the pin 22 of IC751 turns ON Q709 (L ch.) and Q710 (R ch.) to short-circuit the output signals of the playback amplifiers for muting. For the purpose of preventing generation of noise at power ON/OFF, the mute signal is output from Q51. The muting is done by short circuiting the output signal with Q709 (L ch.) and Q710 (R ch.) turned ON.

LOGIC FOR RECORD MODE

When the "REC" button is pressed, the pin 11 of IC751 becomes high level and Q109 (L ch.) and Q110 (R ch.) turn ON. The input to the Dolby NR IC is muted. Also Q712 and Q713 turn ON and Q711 turns OFF. Therefore Q701, Q703 (L ch.) and Q702, Q704 (R ch.) turn OFF to release the muting of the outputs from the record amplifiers.

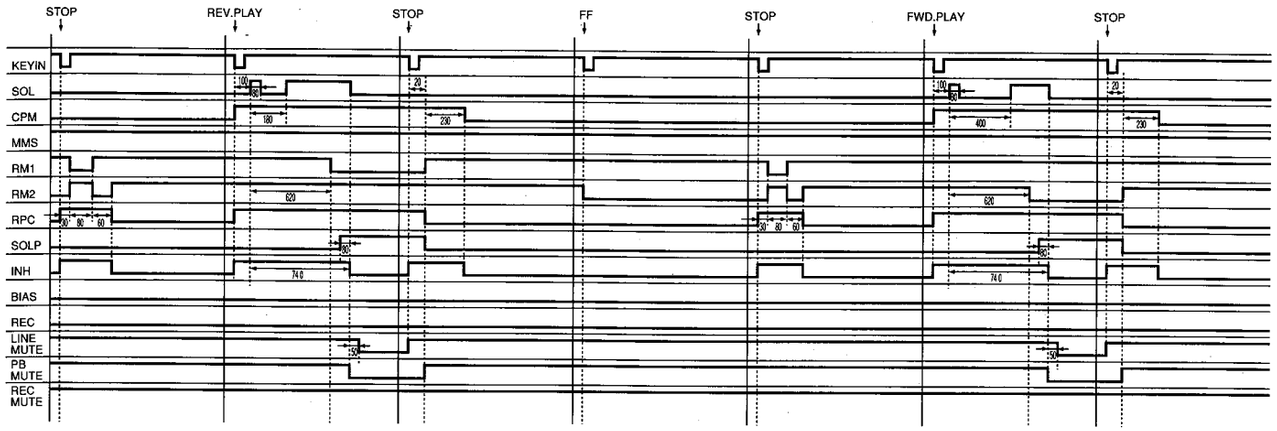
Also, Q505 turns ON and Q506 turns OFF to make the pin 5 of IC501 high level. Therefore the mode is switched to the record mode.

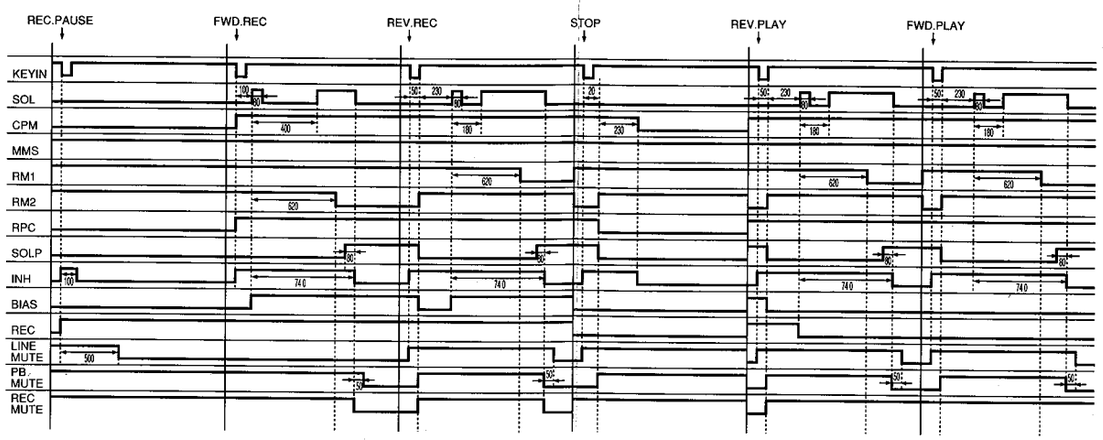
LOGIC FOR RECORD TO PLAYBACK MODE

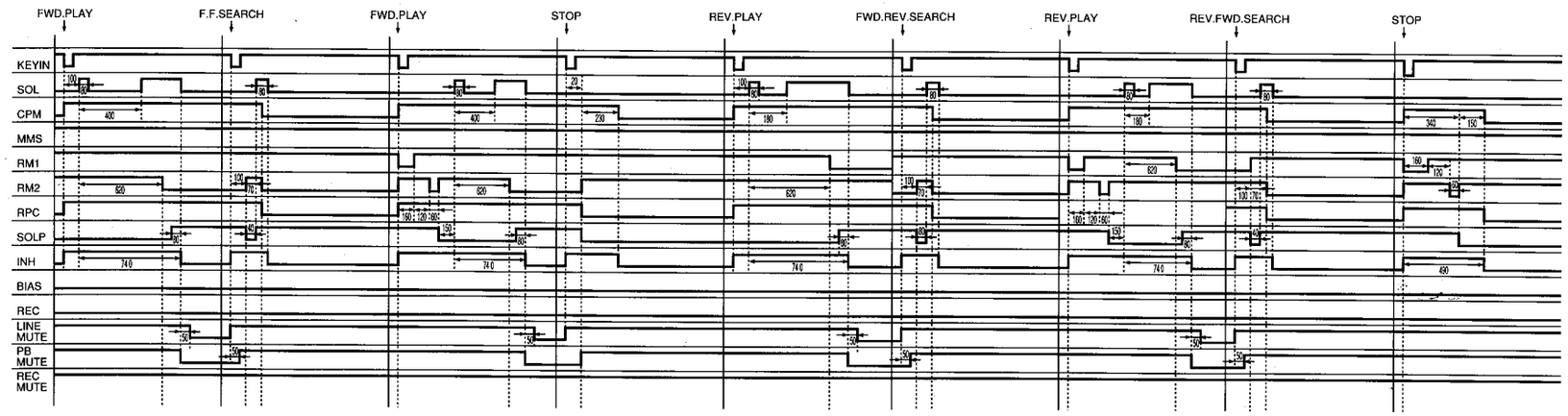
When the "STOP", "PAUSE" or "PLAY" button is pressed, the pin 12 of IC751 becomes high level. Q219 turns ON and Q213 (L ch.), Q214 (R ch.) turn ON to mute the inputs to the record amplifiers. Also, Q712 and Q713 turn OFF and Q711 turns ON to turn ON Q701, Q703 (L ch.) and Q702, Q704 (R ch.). Therefore the outputs from the record amplifiers are muted.

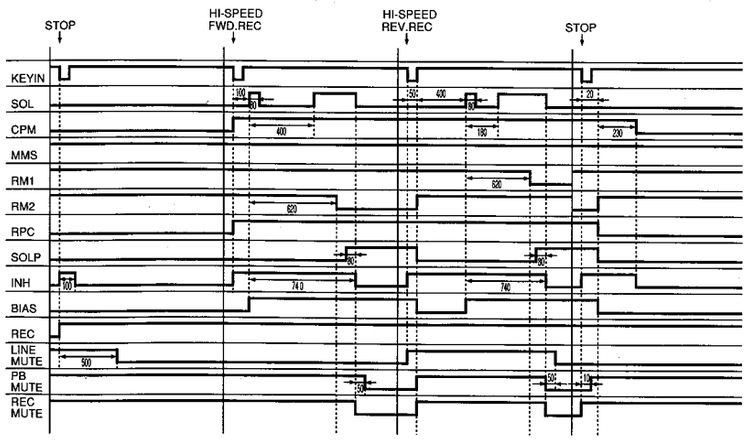
Also, Q505 turns OFF and Q506 turns ON to make the pin 5 of IC501 low level. Therefore the mode is switched to the playback mode.

TIMING CHART

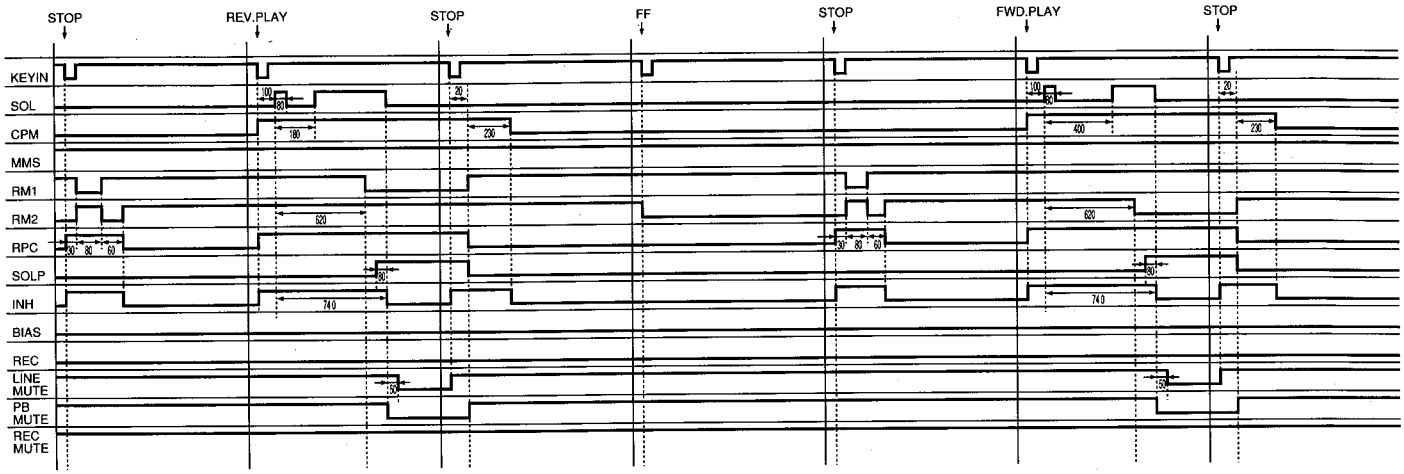


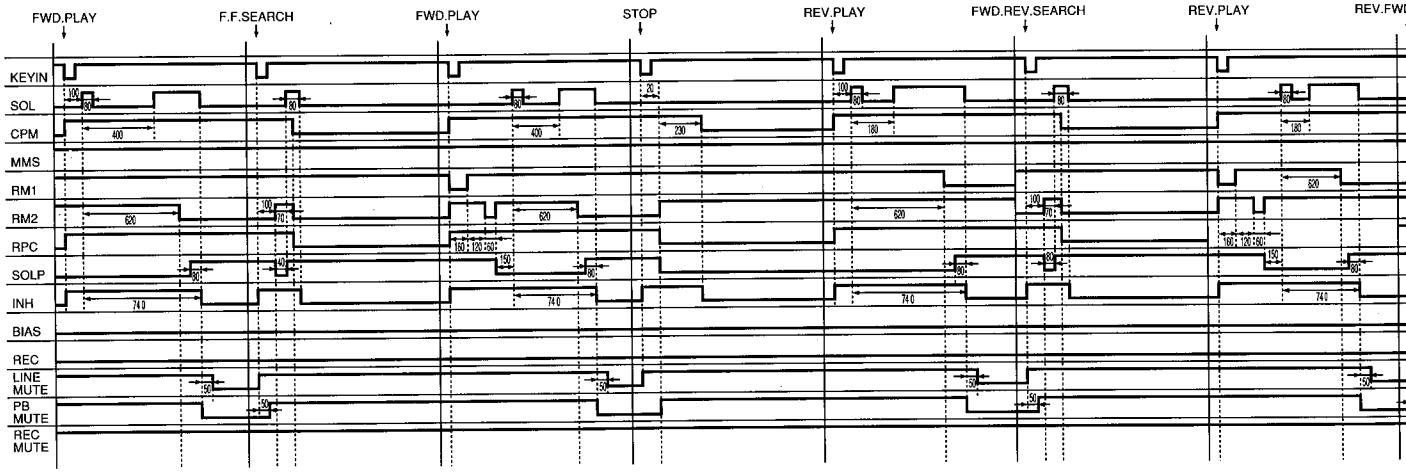


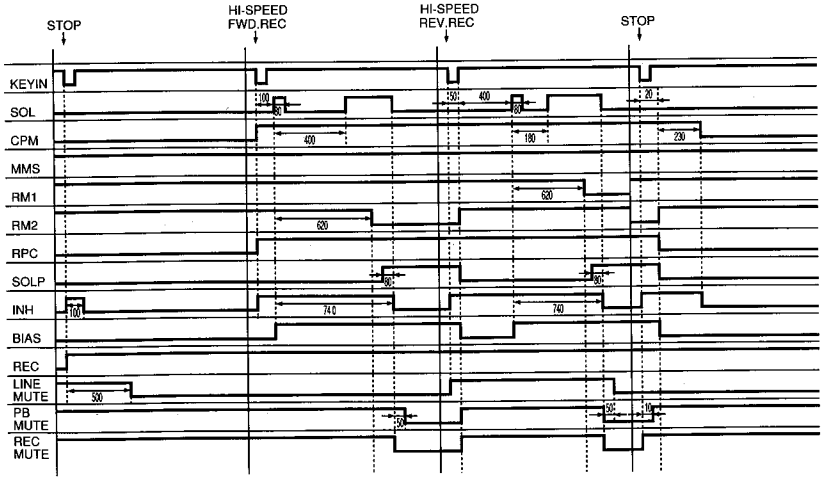


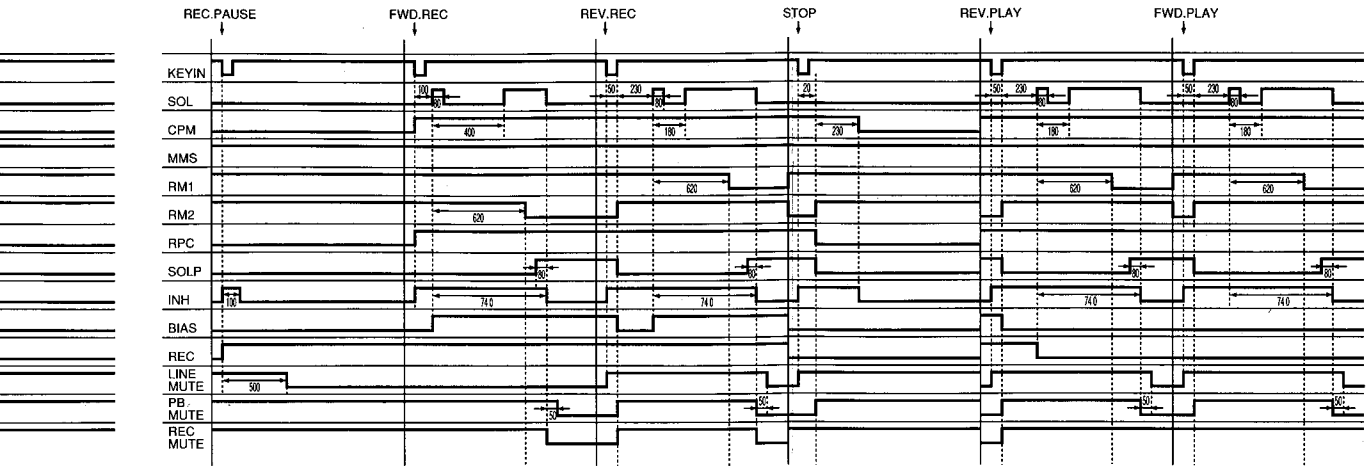


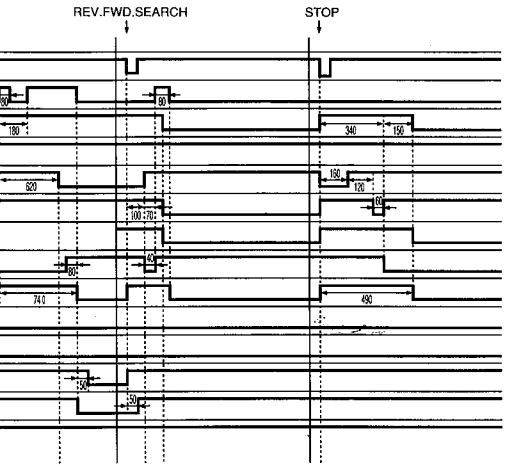
TIMING CHART








REC.PAUSE
FWD.REC
REV.REC
STOP
REV.PLAY
FWD.PLAY
KEYIN
SOL
CPM
MMS
RM1
RM2
RPC
SOLP
INH
BIAS
REC
LINE MUTE
PB MUTE
REC MUTE


REV.FWD.SEARCH
STOP

ALIGNMENT PROCEDURES (REFER TO PAGES 11, 12, 23, 24 AND 25)

CASSETTE MECHANISM CONFIRMATION

Make sure to confirm conditons of the cassette mechanism as follows before adjustment.

1. Confirmation of erase prevention function
- The switch should turn ON when a tape with erroneous erase preventive pawl is inserted. (Use a tape which is 0.2 mm smaller than the minimum size of 62.9 mm or a MAZ-0184-C gauge one.)
- When the switch arm is moved back gradually from the ON position, the switch turn OFF.

2. Confirmation of cassette pack detection function
- The switch should turn ON when a tape is inserted. (Use a tape whose minimum size is 63.5 mm or a MAZ-0184-C gauge one.)
- When the switch arm is moved back gradually from the ON position, the switch should turn OFF.

3. Confirmation of eject function
- The cassette compartment opens smoothy and no abnormal noise should be heard while opening and closing.
- The eject lever opens smoothly without contacting the chassis and damper.
- The eject button can not be pressed during playback.

4. Confirmation of playback, fast forward and rewind functions
- The torque used in each of the playback, fast forward and rewind modes should be within specification.

  Playback .....35 gr:cm – 70 gr.cm
  Fast Forward .....70 gr.cm – 150 gr.cm
  Rewind .....70 gr.cm – 150 gr.cm
- No abnormal noise should be heard during operation in any mode. The solenoid switching sound should not be considered as a noise.

5. Confirmation of positions of record/playback head and playback head
- Head height

a) Set the M-300 head gauge.
b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 1.
c) The adjustment chip should not contact the tape guide of both record/playback head and playback head.

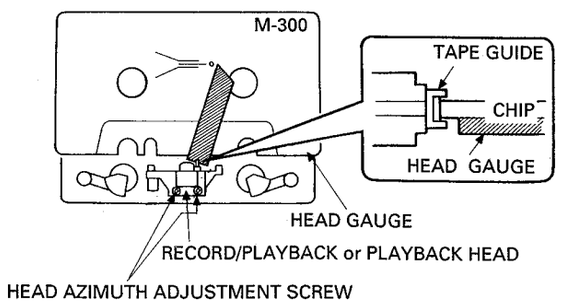


Fig. 1

- Head position

a) Set the M-300 head gauge.
b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 2.
c) With both record/playback head and playback head, the adjustment chip should be between MIN and MAX of the M-300 head gauge.

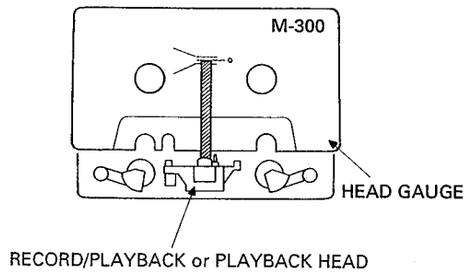


Fig. 2

ELECTRICAL ADJUSTMENT AND CONFIRMATION

1. Before adjustment
- Before electrical adjustment, make sure that confirmations of the cassette mechanism are all completed.
- After the power switch is pushed on, wait for 10 minutes before measuring to be sure of the most stable operation.
- Since head magnetization, dust accumulations, etc. are likely to introduce errors in the various characteristics, it is very important that the heads are properly demagnetized and cleaned before commencing any adjustment, particularly frequency response and head azimuth adjustment.

2. Instruments required
- Low frequency oscillator
- AC VTVM or dual channel AC VTVM
- Oscilloscope
- Wow/flutter meter
- Frequency counter
- Distortion meter

3. Test tapes
- Azimuth adjustment .....MTT-114 or TCC-153
- Tape speed adjustment ....MTT-111DN or TCC-112
- Playback output level adjustment .....MTT-150 or TCC-130
- Playback frequency characteristic confirmation .....TCC-1216 or TCC-162C and TCC-262C
- Reference tapes

  LN SCC-502
  CrO_2 .....SCC-1360
  METAL SCC-565

Note:
C-90 differes with C-60 in the thickness and bias is of unequal, so adjust with the tape whose bias in of Specified Value.

4. General conditions (unless otherwise noted)

Controls and Switches	Settings
Dolby NR	Off
Input Level	Maximum
MPX Filter	Off
Bias Fine Trim	Center
Input Balance	Center

Azimuth Adjustment
When the maximum level point of R channel does not equal that L channel, connect the oscilloscope as shown in Fig. 3 and proceed with azimuth adjustment so that L and R channels are in phase.
a) Connect L channel tape out to "X (or V)" and R channel to "Y (or H)". Observe the lissajouss waveform.
b) Set L and R channels to monaural. Adjust vertical and horizontal gain so that the waveform becomes 45 degree.
c) Adjust azimuth so that the measurement of "a" becomes maximum and the measurement of "b" becomes minimum against the 45 degree line.

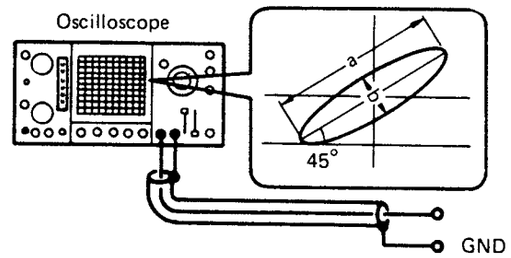


Fig. 3

PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-162C, TCC-262C

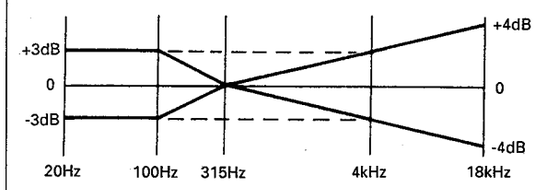


Fig. a

COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

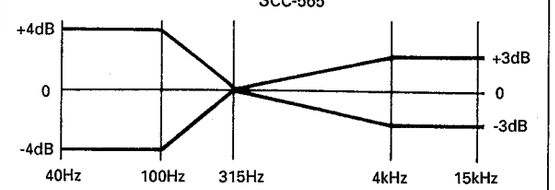


Fig. c

RECORD/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : SCC-502, SCC-1360, SCC-565
DOLBY NO : OFF

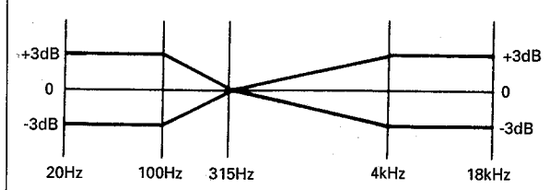


Fig. b

HI-SPEED COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

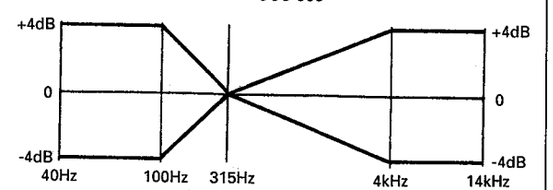


Fig. d

ALIGNMENT PROCEDURES (REFER TO PAGES 11, 12, 23, 24 AND 25)

CASSETTE MECHANISM CONFIRMATION

Make sure to confirm conditons of the cassette mechanism as follows before adjustment.

1. Confirmation of erase prevention function

- The switch should turn ON when a tape with erroneous erase preventive pawl is inserted. (Use a tape which is 0.2 mm smaller than the minimum size of 62.9 mm or a MAZ-0184-C gauge one.)
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- The switch should turn ON when a tape is inserted. (Use a tape whose minimum size is 63.5 mm or a MAZ-0184-C gauge one.)
- When the switch arm is moved back gradually from the ON position, the switch should turn OFF.

3. Confirmation of eject function

- The cassette compartment opens smoothy and no abnormal noise should be heard while opening and closing.
- The eject lever opens smoothly without contacting the chassis and damper.
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- The torque used in each of the playback, fast forward and rewind modes should be within specification.

  Playback .....35 gr:cm – 70 gr.cm
  Fast Forward .....70 gr.cm – 150 gr.cm
  Rewind .....70 gr.cm – 150 gr.cm

- No abnormal noise should be heard during operation in any mode. The solenoid switching sound should not be considered as a noise.

5. Confirmation of positions of record/playback head and playback head

- Head height

a) Set the M-300 head gauge.
b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 1.
c) The adjustment chip should not contact the tape guide of both record/playback head and playback head.

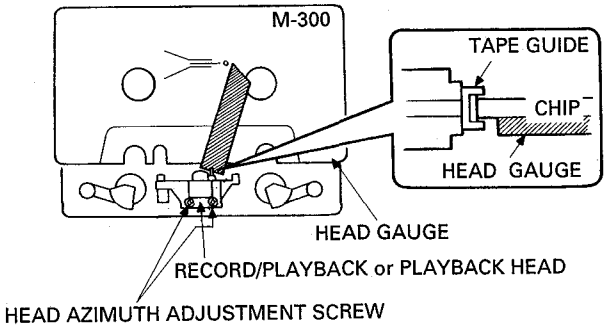


Fig. 1

- Head position

a) Set the M-300 head gauge.
b) Set the unit in the playback mode and place the adjustment chip on the head gauge as shown in the Fig. 2.
c) With both record/playback head and playback head, the adjustment chip should be between MIN and MAX of the M-300 head gauge.

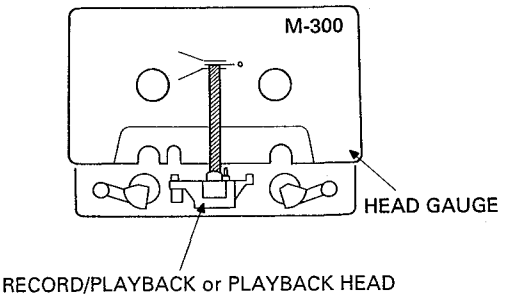


Fig. 2

ELECTRICAL ADJUSTMENT AND CONFIRMATION

1. Before adjustment

- Before electrical adjustment, make sure that confirmations of the cassette mechanism are all completed.
- After the power switch is pushed on, wait for 10 minutes before measuring to be sure of the most stable operation.
- Since head magnetization, dust accumulations, etc. are likely to introduce errors in the various characteristics, it is very important that the heads are properly demagnetized and cleaned before commencing any adjustment, particularly frequency response and head azimuth adjustment.

2. Instruments required

- Low frequency oscillator
- AC VTVM or dual channel AC VTVM
- Oscilloscope
- Wow/flutter meter
- Frequency counter
- Distortion meter

3. Test tapes

- Azimuth adjustment ..... MTT-114 or TCC-153
- Tape speed adjustment .... MTT-111DN or TCC-112
- Playback output level adjustment ..... MTT-150 or TCC-130
- Playback frequency characteristic confirmation ..... TCC-1216 or TCC-162C and TCC-262C
- Reference tapes
  - LN SCC-502
  - CrO_2 ..... SCC-1360
  - METAL SCC-565

Note:
C-90 differes with C-60 in the thickness and bias is of unequal, so adjust with the tape whose bias in of Specified Value.

4. General conditions (unless otherwise noted)

Controls and Switches	Settings
Dolby NR	Off
Input Level	Maximum
MPX Filter	Off
Bias Fine Trim	Center
Input Balance	Center

Azimuth Adjustment

When the maximum level point of R channel does not equal that L channel, connect the oscilloscope as shown in Fig. 3 and proceed with azimuth adjustment so that L and R channels are in phase.

a) Connect L channel tape out to "X (or V)" and R channel to "Y (or H)". Observe the lissajouss waveform.
b) Set L and R channels to monaural. Adjust vertical and horizontal gain so that the waveform becomes 45 degree.
c) Adjust azimuth so that the measurement of "a" becomes maximum and the measurement of "b" becomes minimum against the 45 degree line.

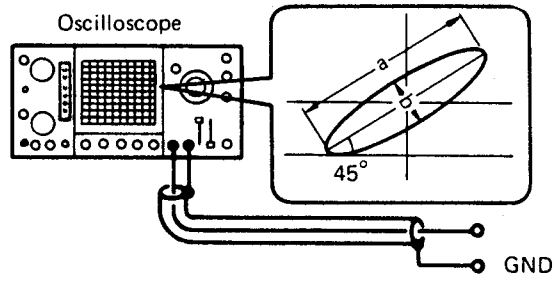


Fig. 3

PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-162C, TCC-262C

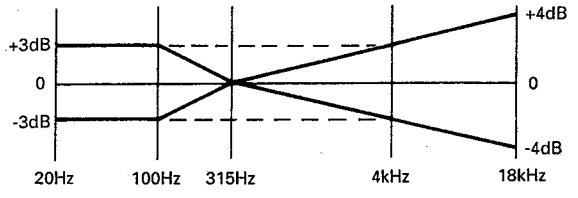


Fig. a

COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

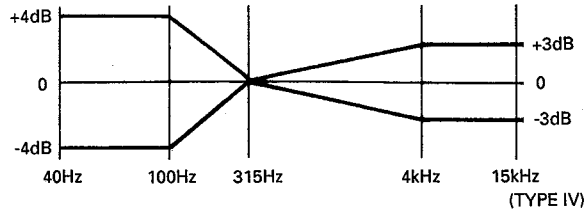


Fig. c

RECORD/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : SCC-502, SCC-1360, SCC-565
DOLBY NO : OFF

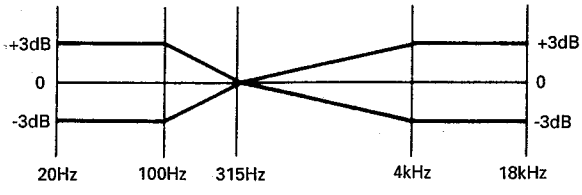


Fig. b

HI-SPEED COPY/PLAYBACK FREQUENCY CHARACTERISTIC
TEST TAPE : TCC-262C TO SCC-502
TCC-162C SCC-1360
SCC-565

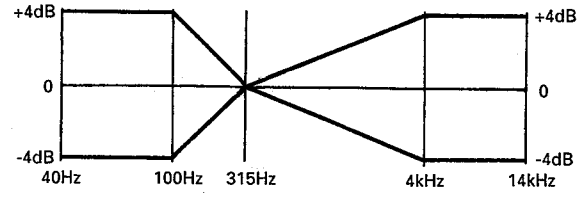


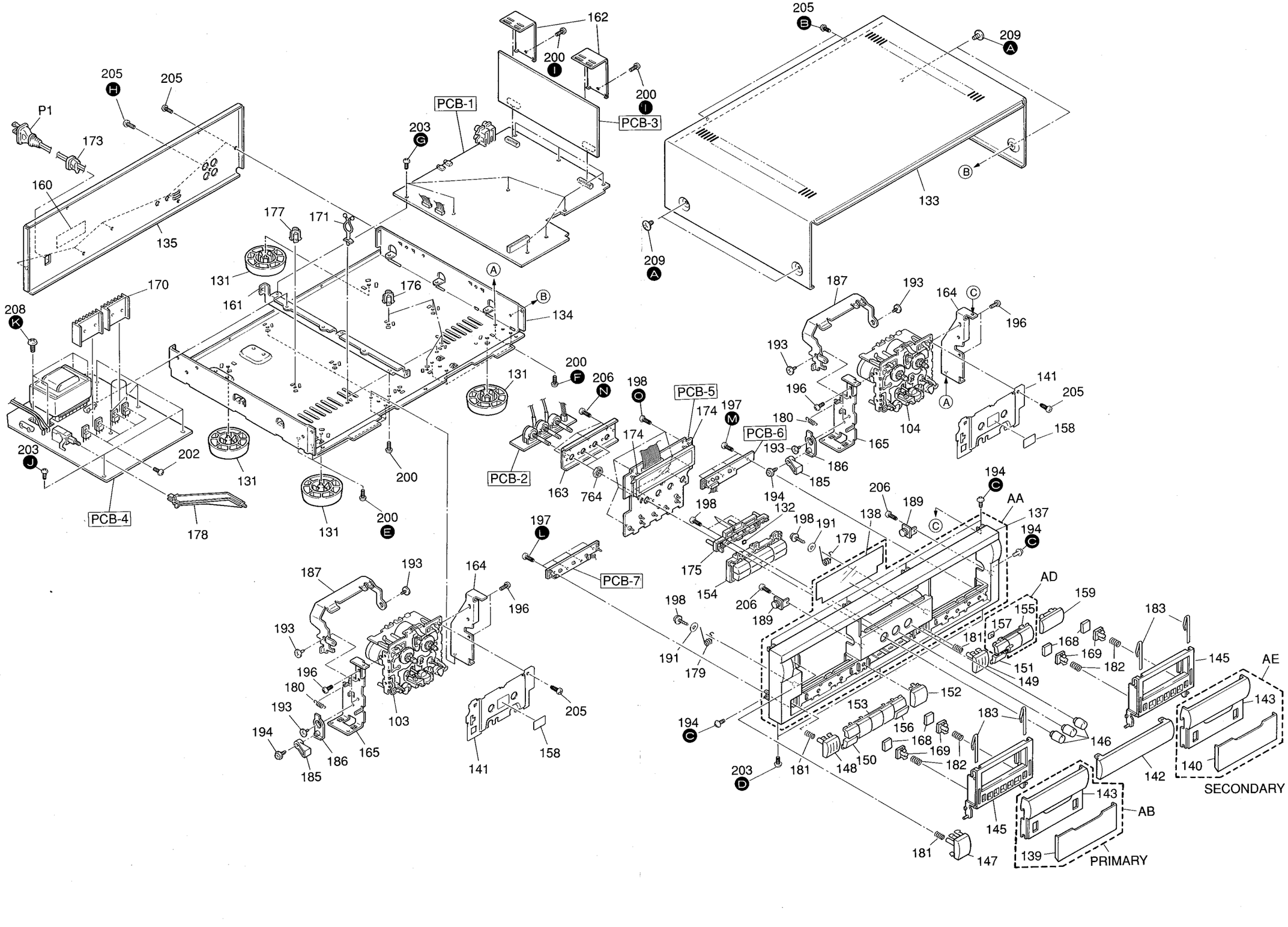
Fig. d

Step		Alignment	Instrument Required	Input Signal	Mode	Test Point	Adjustment	For
1		Primary Deck Quick sensor	VTVM Black tape with leader tape		PB (Primary)	TP809	VR803	Adjust VR803 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
2		Secondary Deck Quick sensor	VTVM Black tape with leader tape		PB (Secondary)	TP859	VR853	Adjust VR853 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
3		Azimuth	VTVM Oscilloscope Test tape (MTT-114 or TCC-153)		PB	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	Azimuth screw	Maximum output Refer to "Azimuth Adjustment" on page 6.
4		Primary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR801	6020 Hz ±20 Hz (TP806 : GND connection) Adjust at the center of test tape.
5		Primary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR802	3010 Hz ±10 Hz Adjust at the center of test tape.
6		Secondary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR851	6020 Hz ±20 Hz (TP856 : GND connection) Adjust at the center of test tape.
7		Secondary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)		PB	TP501 (L ch), GND TP502 (R ch), GND	VR852	3010 Hz ±10 Hz Adjust at the center of test tape.
8		Primary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)		PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR101 (L ch) VR102 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
9		Secondary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)		PB (Secondary)	TP501 (L ch), GND TP502 (R ch), GND	VR157 (L ch) VR158 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
10		Primary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)		PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR103 VR104	Adjust VR103 and VR104 so the playback frequency response (1 kHz/18 kHz) is +0.6 ~ 0.7 dB. Refer to Fig. a
11		Secondary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)		PB (Secondary	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR153 VR154	Adjust VR153 and VR154 so the playback frequency response (1 kHz/18 kHz) is +0.6 ~ 0.7 dB. Refer to Fig. a
12		Bias frequency confirmation	Frequency counter		REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	T301	105 kHz ±3 kHz Use METAL tape.
13		Bias trap	VTVM		REC/PB (Primary)	TP201 (L ch), GND TP202 (R ch), GND	LC201, LC202	Minimum output Use METAL tape. INPUT VR. minimum
14	1	Bias level (pre-adjustment)	VTVM		REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	VR351 VR352	35 mV Test tape is METAL blank tape.
	2						VR353	20 mV Test tape is CrO_2 blank tape.
	3						VR354	13 mV Test tape is Normal blank tape.
15		Record level (pre-adjustment)	VTVM Blank tapes METAL SCC-565 CrO_2 SCC-1360 Normal SCC-502	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV in REC-PAUSE mode.	REC/PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR201, VR202 VR351, VR352	560 mV Tape selector is METAL position. Adjust VR351 and VR352 so that the distortion becomes 1.0% – 1.4%
							VR353 (CrO_2) VR354 (Normal)	560 mV Adjust VR353 so that the distortion becomes 1.3% (CrO_2). Adjust VR354 so that the distortion becomes 1.0% (Normal). This confiemation should be at each tape selector position.
16	1	Record/playback frequency characteristic	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502	Apply 1 kHz signal to INPUT jack. The output at TP501 and TP502 are Dolby level -25 dB. Then adjust with a 20 Hz to 30 kHz sweep signal.	REC/PB	OUTPUT jack	VR353 L201, L202 (VR351, VR352)	So that the record/playback frequency resportion is flat (at least within the range in Fig. b.) Tape selector is CrO_2 position.
	2						VR351 VR352	So that the record/playback frequency resportion is flat (at least within the range in Fig. b.) Tape selector is METAL position.
	3						VR354 L201, L202 (VR351, VR352)	So that the record/playback frequency resportion is flat (at least within the range in Fig. b.) Tape selector is Normal position.
17		Record level	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502	Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV (1 kHz) in REC-PAUSE mode.	REC/PB	TP501 (L ch), GND TP502 (R ch), GND		560 mV Perform adjustment using CrO_2. Perform checking only for Normal and METAL tapes.
18		High speed copy frequency characteristic	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-185C		High Speed Copy Play	OUTPUT	L203, L204	Load TCC-185C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within ±3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
19		High speed copy frequency characteristic	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-285C		High Speed Copy Play	OUTPUT	L203, L204	Load TCC-285C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within ±3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
20		Meter level	VTVM	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is1.5 dB below 775 mV.	REC/PAUSE	PEAK LEVEL METER	VR401 VR402	Adjust so the -1 dB segments light.
21		MPX filter characteristic confirmation	VTVM	Apply 19 kHz, 15 kHz and 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 775mV.	REC/PAUSE MPX filter ON	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	LC501 LC502	Adjust for -0.3 dB at 15 kHz and > 35 dB at 19 kHz

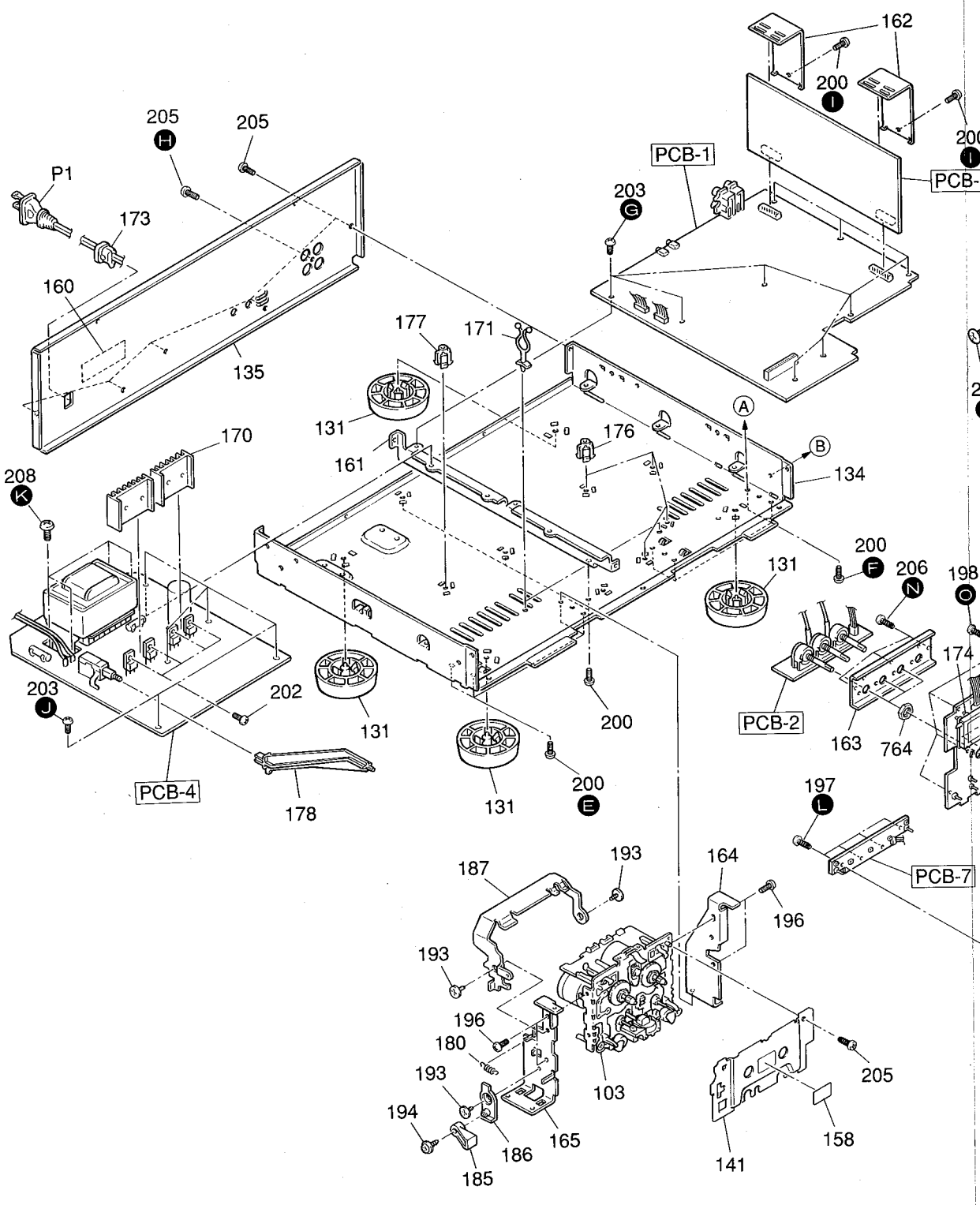
Step	Alignment	Instrument Required	Input Signal
1	Primary Deck Quick sensor	VTVM Black tape with leader tape	
2	Secondary Deck Quick sensor	VTVM Black tape with leader tape	
3	Azimuth	VTVM Oscilloscope Test tape (MTT-114 or TCC-153)	
4	Primary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
5	Primary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
6	Secondary Deck Tape speed (Hi-speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
7	Secondary Deck Tape speed (Normal speed)	Frequency counter Test tape (MTT-111DN or TCC-112)	
8	Primary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)	
9	Secondary Deck Playback output level	VTVM Test tape (MTT-150 or TCC-130)	
10	Primary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)	
11	Secondary Deck Playback frequency characteristic confirmation	VTVM Test tape (TCC-1216 or TCC-162C and TCC-262C)	
12	Bias frequency confirmation	Frequency counter	
13	Bias trap	VTVM	
14 (1, 2, 3)	Bias level (pre-adjustment)	VTVM	
15	Record level (pre-adjustment)	VTVM Blank tapes METAL SCC-565 CrO_2 SCC-1360 Normal SCC-502	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV in REC-PAUSE mode.
16 (1, 2, 3)	Record/playback frequency characteristic	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502	Apply 1 kHz signal to INPUT jack. The output at TP501 and TP502 are Dolby level -25 dB. Then adjust with a 20 Hz to 30 kHz sweep signal.
17	Record level	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502	Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 560 mV (1 kHz) in REC-PAUSE mode.
18	High speed copy frequency characteristic	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-185C	
19	High speed copy frequency characteristic	VTVM Blank tapes CrO_2 SCC-1360 METAL SCC-565 Normal SCC-502 Test tape TCC-285C	
20	Meter level	VTVM	Apply 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is1.5 dB below 775 mV.
21	MPX filter characteristic confirmation	VTVM	Apply 19 kHz, 15 kHz and 1 kHz signal to INPUT jack. Set INPUT LEVEL knob so that TP501 and TP502 to GND voltage is 775mV.

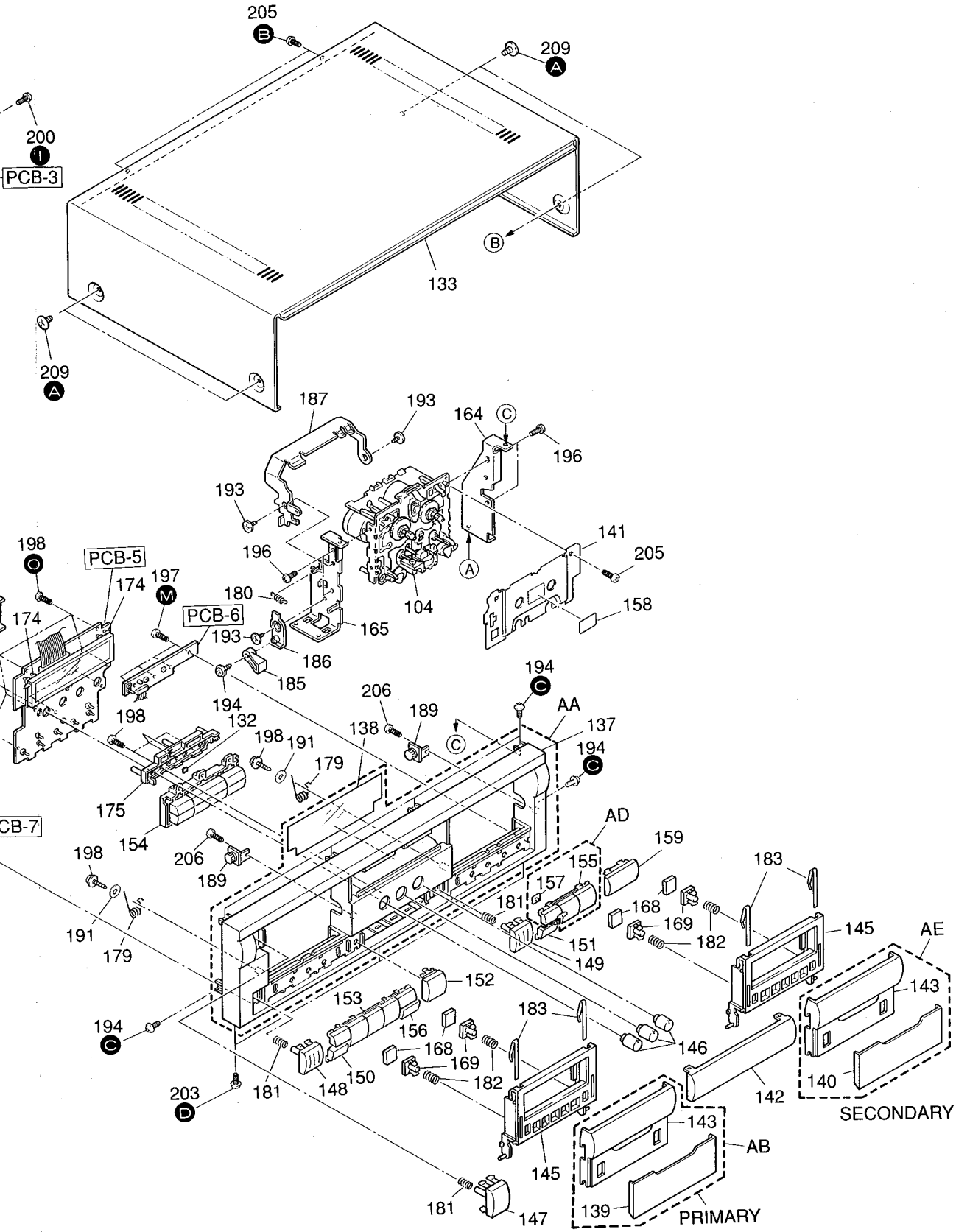
	Mode	Test Point	Adjustment	For
	PB (Primary)	TP809	VR803	Adjust VR803 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
	PB (Secondary)	TP859	VR853	Adjust VR853 so the voltage at the test point is 0.62V when the leader tape is running and 200 mV or less in the middle of tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	Azimuth screw	Maximum output Refer to "Azimuth Adjustment" on page 6.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR801	6020 Hz ±20 Hz (TP806 : GND connection) Adjust at the center of test tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR802	3010 Hz ±10 Hz Adjust at the center of test tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR851	6020 Hz ±20 Hz (TP856 : GND connection) Adjust at the center of test tape.
	PB	TP501 (L ch), GND TP502 (R ch), GND	VR852	3010 Hz ±10 Hz Adjust at the center of test tape.
	PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR101 (L ch) VR102 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
	PB (Secondary)	TP501 (L ch), GND TP502 (R ch), GND	VR157 (L ch) VR158 (R ch)	775 mV Tape selector is Normal position. Adjust at Dolby NR off.
	PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR103 VR104	Adjust VR103 and VR104 so the playback frequency response (1 kHz/18 kHz) is +0.6 ~ 0.7 dB. Refer to Fig. a
	PB (Secondary	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	VR153 VR154	Adjust VR153 and VR154 so the playback frequency response (1 kHz/18 kHz) is +0.6 ~ 0.7 dB. Refer to Fig. a
	REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	T301	105 kHz ±3 kHz Use METAL tape.
	REC/PB (Primary)	TP201 (L ch), GND TP202 (R ch), GND	LC201, LC202	Minimum output Use METAL tape. INPUT VR. minimum
	REC/PB (Primary)	TP101 (L ch), GND TP102 (R ch), GND	VR351 VR352	35 mV Test tape is METAL blank tape.
			VR353	20 mV Test tape is CrO_2 blank tape.
			VR354	13 mV Test tape is Normal blank tape.
EVEL knob 0 mV in	REC/PB (Primary)	TP501 (L ch), GND TP502 (R ch), GND	VR201, VR202 VR351, VR352	560 mV Tape selector is METAL position. Adjust VR351 and VR352 so that the distortion becomes 1.0% – 1.4%
			VR353 (CrO_2) VR354 (Normal)	560 mV Adjust VR353 so that the distortion becomes 1.3% (CrO_2). Adjust VR354 so that the distortion becomes 1.0% (Normal). This confiemation should be at each tape selector position.
at TP501 al.	REC/PB	OUTPUT jack	VR353 L201, L202 (VR351, VR352)	So that the record/playback frequency resportion is flat (at least within the range in Fig. b.) Tape selector is CrO_2 position.
			VR351 VR352	So that the record/playback frequency resportion is flat (at least within the range in Fig. b.) Tape selector is METAL position.
			VR354 L201, L202 (VR351, VR352)	So that the record/playback frequency resportion is flat (at least within the range in Fig. b.) Tape selector is Normal position.
02 to GND e.	REC/PB	TP501 (L ch), GND TP502 (R ch), GND		560 mV Perform adjustment using CrO_2. Perform checking only for Normal and METAL tapes.
	High Speed Copy Play	OUTPUT	L203, L204	Load TCC-185C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within ±3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
	High Speed Copy Play	OUTPUT	L203, L204	Load TCC-285C in SEC DECK and SCC-565 in PRI DECK and execute high-speed copying, then play the tape in the PRI DECK. Check that the frequency response of the 14 kHz signal is within ±3 dB of that of the 1 kHz signal. If this specification cannot be satisfied, adjust L203 and L204. After adjustment is confirmed, also use the SCC-502 and SCC-1360 tapes to check.
EVEL knob dB below	REC/PAUSE	PEAK LEVEL METER	VR401 VR402	Adjust so the -1 dB segments light.
T jack. 02 to GND	REC/PAUSE MPX filter ON	TP501 (L ch), GND TP502 (R ch), GND or OUTPUT jack	LC501 LC502	Adjust for -0.3 dB at 15 kHz and > 35 dB at 19 kHz

GENERAL UNIT
EXPLODED VIEW



GENERAL UNIT
EXPLODED VIEW

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PCB-3
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PCB-5
PCB-6
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139
AB
PRIMARY

GENERAL UNIT PARTS LIST

Ref. No.	Part No.	Description
AA	A442-DC5300B	FRONT PANEL ASSEMBLY
AB	A532-DC5300B	WINDOW ASSEMBLY, PRI
AD	A662-DC5300B	PUSH BUTTON ASSEMBLY
AE	A532-DC5300F	WINDOW ASSEMBLY, SEC
103	3112-15903	REC BLOCK ASSEMBLY, PRI
104	3112-15904	REC BLOCK ASSEMBLY, SEC
131	1319-03301	LEG (x4)
132	1751-19702	LABEL
133	1414-16701	TOP COVER
134	1424-34201	CABINET BOTTOM
135	1424-34301	CABI BACK (BK)
135	1424-34304	CABI BACK (IB) (BB)
136	1751-22201	LABEL, WINDOW
137	1442-26801	PANEL, FRONT
138	1511-22101	PLATE, DISPLAY
139	1512-07501	PLATE, CASS. LID (PRI)
140	1512-07502	PLATE, CASS. LID (SEC)
141	1514-23501	PLATE, MECHA (x2)
142	1532-20901	WINDOW, DISPLAY
143	1532-21001	WINDOW, CASS. LID (x2)
145	1612-07801	CASS. LID (x2)
146	1632-20401	ROTARY KNOB (x3)
147	1662-58401	PUSH BUTTON, POWER
148	1662-65001	PUSH BUTTON, EJECT L
149	1662-65101	PUSH BUTTON, EJECT R
150	1662-65201	PUSH BUTTON, REC/PAUSE
151	1662-65301	PUSH BUTTON, HIGH SPEED COPY
152	1662-65401	PUSH BUTTON, TRANSPORT
153	1662-65501	PUSH BUTTON, CASS. L
154	1662-65601	PUSH BUTTON, CENTER
155	1662-65701	PUSH BUTTON, CASS. R
156	1662-66301	PUSH BUTTON, REC MUTE
157	1732-08201	INDICATOR
158	1741-01601	ORNAMENT (x2)
159	1742-08101	ORNAMENT, CASS. R
160	1756-CSA	LABEL (BK)
161	2219-8293	METAL FITTG, CENTER PCB
162	2219-8323	METAL FITTG, DOLBY PCB (x2)
163	2219-8324	METAL FITTG, VR HOLD
164	2219-8325	METAL FITTG, MECHA R (x2)
165	2210-8326	METAL FITTG, MECHA L (x2)
167	2216-7197	SHIELD PLATE
168	2114-87143	BUSHING (x6)
169	2240-7371	HOLDER (x4)
170	2222-7281	HEAT SINK (x2)
171	2240-7050	HOLDER (x2)
172	2240-R0101	HOLDER (x5)
173	2240-364	HOLDER
174	2240-7387	HOLDER (x2)
175	2240-7391	HOLDER
176	2360-7022	BOSS, SPE (x4)
177	2360-7063	BOSS, SPE
178	2601-7199	SHAFT
179	2651-059	SPRING (x2)
180	2651-11212	SPRING (x2)
181	2651-2101732	SPRING (x3)
182	2651-2101735	SPRING (x4)
183	2652-105	LEAF SPRING (x4)
185	2672-7051	LEVER (x2)
186	2672-7052	LEVER (x2)
187	2672-7053	LEVER (x2)
189	2692-015	DAMPER (x2)
191	2401-0216	WASHER, METAL (x2)
193	2320-044	SCREW, SPF+ (x6)
194	2340-7009	SCREW, SPF T+ (x8)
196	2347-260527	SCREW, BND T+ (2.6x5mm) (x8)
197	2347-260626	SCREW, BND T+ (2.6x6mm) (x8)
198	2347-R0126122	SCREW, BND T+ (2.6x12mm) (x13)
200	2347-R0130062	SCREW, BND T+ (3x6mm) (x13)
202	2347-R0130082	SCREW, BND T(+) (3x8mm) (x4)
203	2347-R0130082	SCREW, BND T(+) (3x8mm) (x17)
205	2347-R0130084	SCREW, BND T(+) (3x8mm) (x10)
206	2347-R0130122	SCREW, BND T(+) (3x12mm) (x5)
208	2347-R0140062	SCREW, BND T(+) (4x6mm) (x4)
209	2347-R0140064	SCREW, BND T(+) (4x6mm) (x4)
764	2440-62	NUT, SPE (x3)
⚠ P1	4161-71151	CORD W/PLUG (BK)
⚠ P1	4161-7256	CORD W/PLUG (IB)
⚠ P1	4161-04100	CORD W/PLUG (BB)

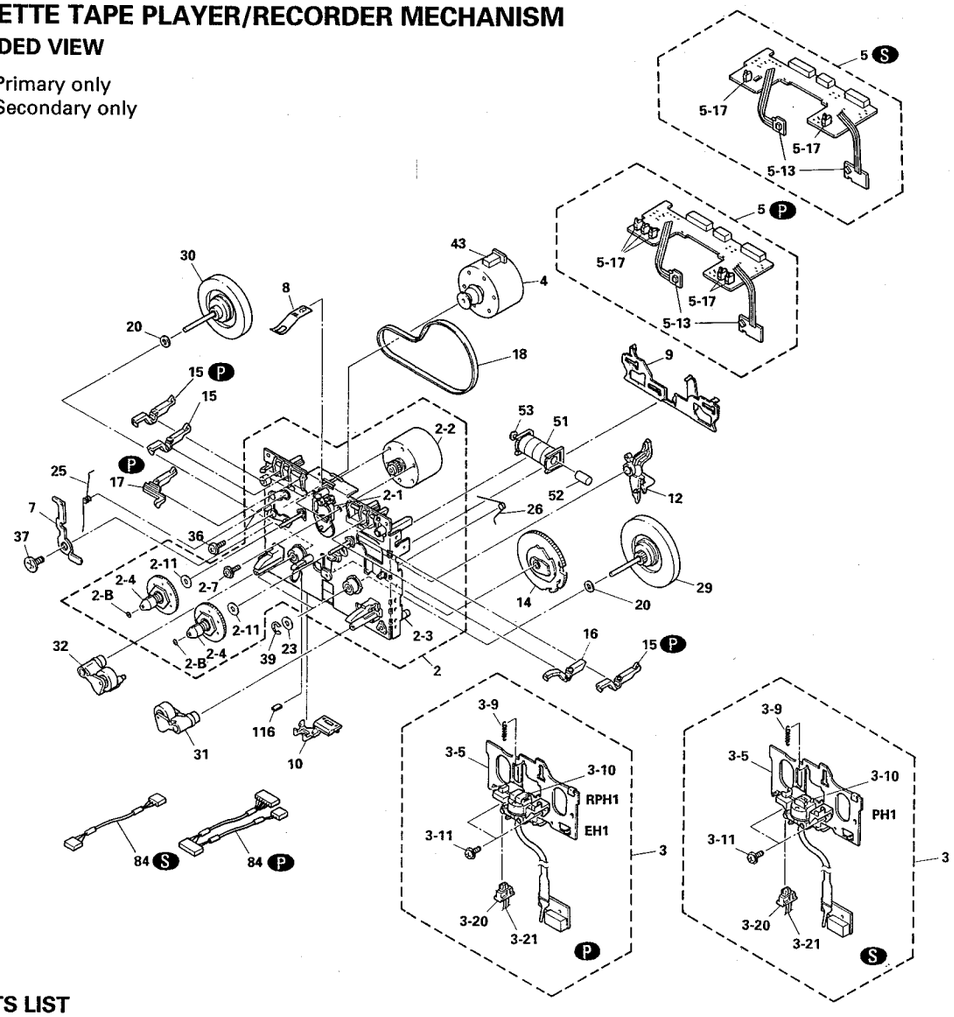
NOTE:

⚠ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

CASSETTE TAPE PLAYER/RECORDER MECHANISM

EXPLODED VIEW

(P) : Primary only
(S) : Secondary only



PARTS LIST

Ref. No.	Part No.	Description
2	F511-496	CHASSIS BLK
2-1	F517-049	IDLER BLK
2-2	F564-280	MTR REEL BLK
2-3	F612-168	CHASSIS BASE BLK
2-4	F623-037	REEL BASE BLK
2-7	FG156-11A	SCREW 2.6×6.4 ZN
2-8	FJ111-17	WASHER 1.7×0.25
2-11	UJ12V-11	WASHER 2.1×0.25T
3	F513-550	PLATE HD BLK (P)
3	F513-619	PLATE HD BLK (S)
3-5	FC52E-36	HEAD BASE
3-9	FK26N-14	HB SP
3-10	FU17M-61	HADKH5560B (P) R/P HEAD
3-10	FU17W-61	HADKH2516B (S) P HEAD
3-11	UG19D-11	SCREW TT 2.0×5 ZN
3-20	AZ13P-00	SPI-320BC
3-21	WG50M-03A	QS LEAD WIRE
4	F525-256	MTR MAIN BLK
5	F567-404	PCB CONTROL BLK (P)
5	F567-405	PCB CONTROL BLK (S)
5-1	F743-065	PCB BASE BLK
5-13	AZ15S-00	GP2S04B
5-17	UE16E-11	PUSH SWITCH
7	FC39L-70	EJECT PREVENTION ARM(L)
8	FC52H-12	SPRING CASSETTE
9	FC52F-15	SLIDE PLATE
10	FD45H-15	LEAD HOLDER
12	FD45G-12	PLAY ARM
14	FD45B-15	CAM GEAR (3R)
15	FD44T-14	SWITCH ARM, REC
16	FD44Y-12	SWITCH ARM(R), PACK
17	FD44V-12	SWITCH ARM(L), METAL (P)
18	FF17G-21, 31	MAIN BELT
20	FJ111-30	WASHER 2.6×0.25
23	FJ111-14	WASHER 2.6×0.5
25	FK28M-15	EJECT PREVENTION SPRING (L)
26	FK28R-11	SLIDE SPRING
29	FR23B-11	FLYWHEEL ASS'Y (ZDC)
30	FR22K-13	FLYWHEEL ASS'Y (RVS)
31	FR20L-21A	PINCH ROLLER ASS'Y(R)
32	FR20M-22	PINCH ROLLER ASS'Y(L)
36	FG114-14	SCREW 2.6×5 ZN
37	UG15S-11A	SCREW
39	UG13U-15	E RING
43	FF17C-12	HOLDER CUSHION(L)
51	F765-263	SOLENOID BLK
52	FL39H-12A	FIXED BAR
53	FL39K-12	PLANGER
84	WH52P-66	WIRE CONNECTOR (R/P) (P)
84	WH52N-04A	WIRE CONNECTOR (PB) (S)
116	UT11R-11	REFLECTION PLATE

GENERAL UNIT PARTS LIST

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103	3112-15903	REC BLOCK ASSEMBLY, PRI
104	3112-15904	REC BLOCK ASSEMBLY, SEC
131	1319-03301	LEG (x4)
132	1751-19702	LABEL
133	1414-16701	TOP COVER
134	1424-34201	CABINET BOTTOM
135	1424-34301	CABI BACK (BK)
135	1424-34304	CABI BACK (IB) (BB)
136	1751-22201	LABEL, WINDOW
137	1442-26801	PANEL, FRONT
138	1511-22101	PLATE, DISPLAY
139	1512-07501	PLATE, CASS. LID (PRI)
140	1512-07502	PLATE, CASS. LID (SEC)
141	1514-23501	PLATE, MECHA (x2)
142	1532-20901	WINDOW, DISPLAY
143	1532-21001	WINDOW, CASS. LID (x2)
145	1612-07801	CASS. LID (x2)
146	1632-20401	ROTARY KNOB (x3)
147	1662-58401	PUSH BUTTON, POWER
148	1662-65001	PUSH BUTTON, EJECT L
149	1662-65101	PUSH BUTTON, EJECT R
150	1662-65201	PUSH BUTTON, REC/PAUSE
151	1662-65301	PUSH BUTTON, HIGH SPEED COPY
152	1662-65401	PUSH BUTTON, TRANSPORT
153	1662-65501	PUSH BUTTON, CASS. L
154	1662-65601	PUSH BUTTON, CENTER
155	1662-65701	PUSH BUTTON, CASS. R
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165	2210-8326	METAL FITTG, MECHA L (x2)
167	2216-7197	SHIELD PLATE
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170	2222-7281	HEAT SINK (x2)
171	2240-7050	HOLDER (x2)
172	2240-R0101	HOLDER (x5)
173	2240-364	HOLDER
174	2240-7387	HOLDER (x2)
175	2240-7391	HOLDER
176	2360-7022	BOSS, SPE (x4)
177	2360-7063	BOSS, SPE
178	2601-7199	SHAFT
179	2651-059	SPRING (x2)
180	2651-11212	SPRING (x2)
181	2651-2101732	SPRING (x3)
182	2651-2101735	SPRING (x4)
183	2652-105	LEAF SPRING (x4)
185	2672-7051	LEVER (x2)
186	2672-7052	LEVER (x2)
187	2672-7053	LEVER (x2)
189	2692-015	DAMPER (x2)
191	2401-0216	WASHER, METAL (x2)
193	2320-044	SCREW, SPF+ (x6)
194	2340-7009	SCREW, SPF T+ (x8)
196	2347-260527	SCREW, BND T+ (2.6x5mm) (x8)
197	2347-260626	SCREW, BND T+ (2.6x6mm) (x8)
198	2347-R0126122	SCREW, BND T+ (2.6x12mm) (x13)
200	2347-R0130062	SCREW, BND T+ (3x6mm) (x13)
202	2347-R0130082	SCREW, BND T(+) (3x8mm) (x4)
203	2347-R0130082	SCREW, BND T(+) (3x8mm) (x17)
205	2347-R0130084	SCREW, BND T(+) (3x8mm) (x10)
206	2347-R0130122	SCREW, BND T(+) (3x12mm) (x5)
208	2347-R0140062	SCREW, BND T(+) (4x6mm) (x4)
209	2347-R0140064	SCREW, BND T(+) (4x6mm) (x4)
764	2440-62	NUT, SPE (x3)
⚠ P1	4161-71151	CORD W/PLUG (BK)
⚠ P1	4161-7256	CORD W/PLUG (IB)
⚠ P1	4161-04100	CORD W/PLUG (BB)

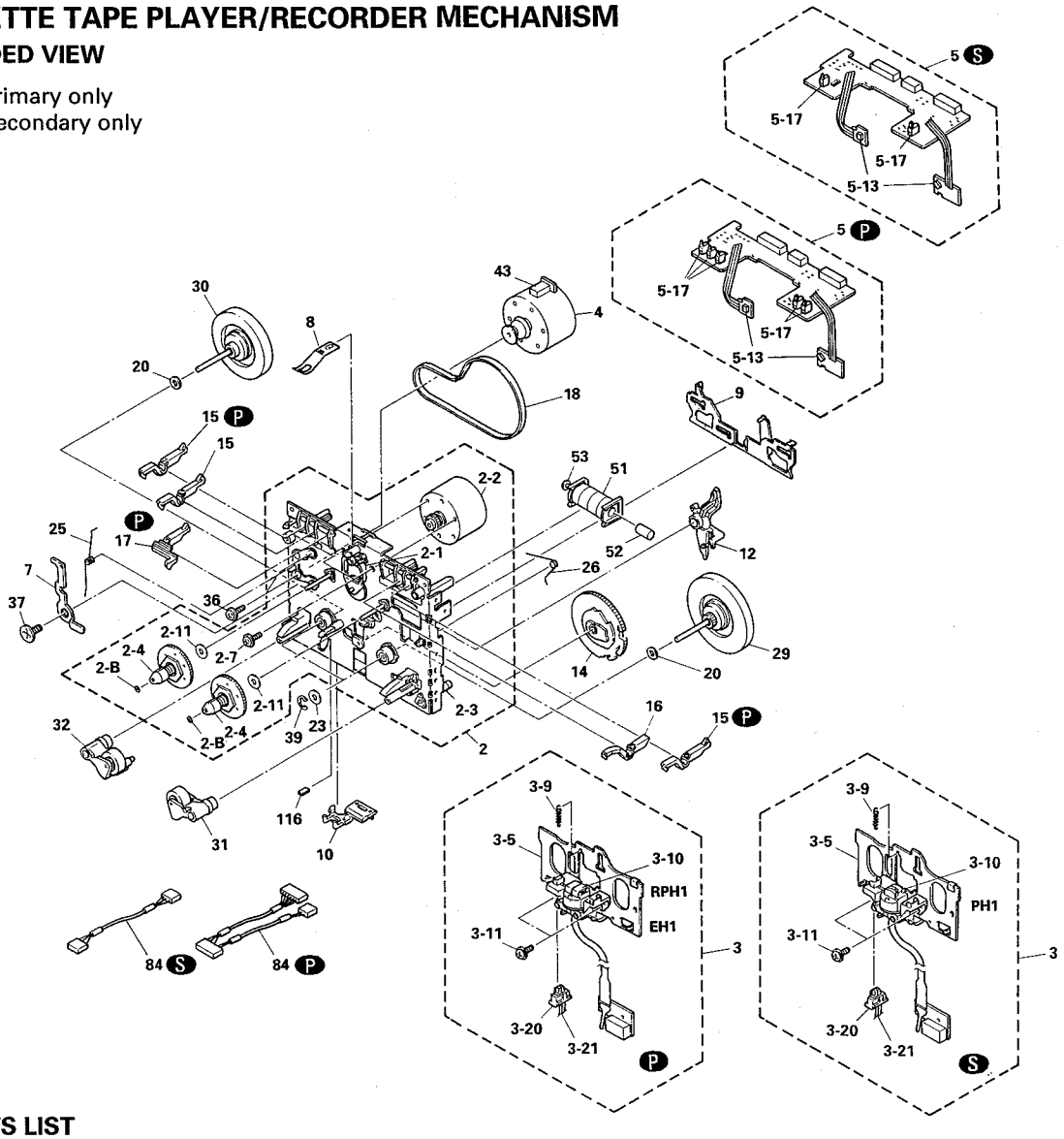
NOTE:

⚠ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

CASSETTE TAPE PLAYER/RECORDER MECHANISM

EXPLODED VIEW

(P) : Primary only
(S) : Secondary only



PARTS LIST

Ref. No.	Part No.	Description
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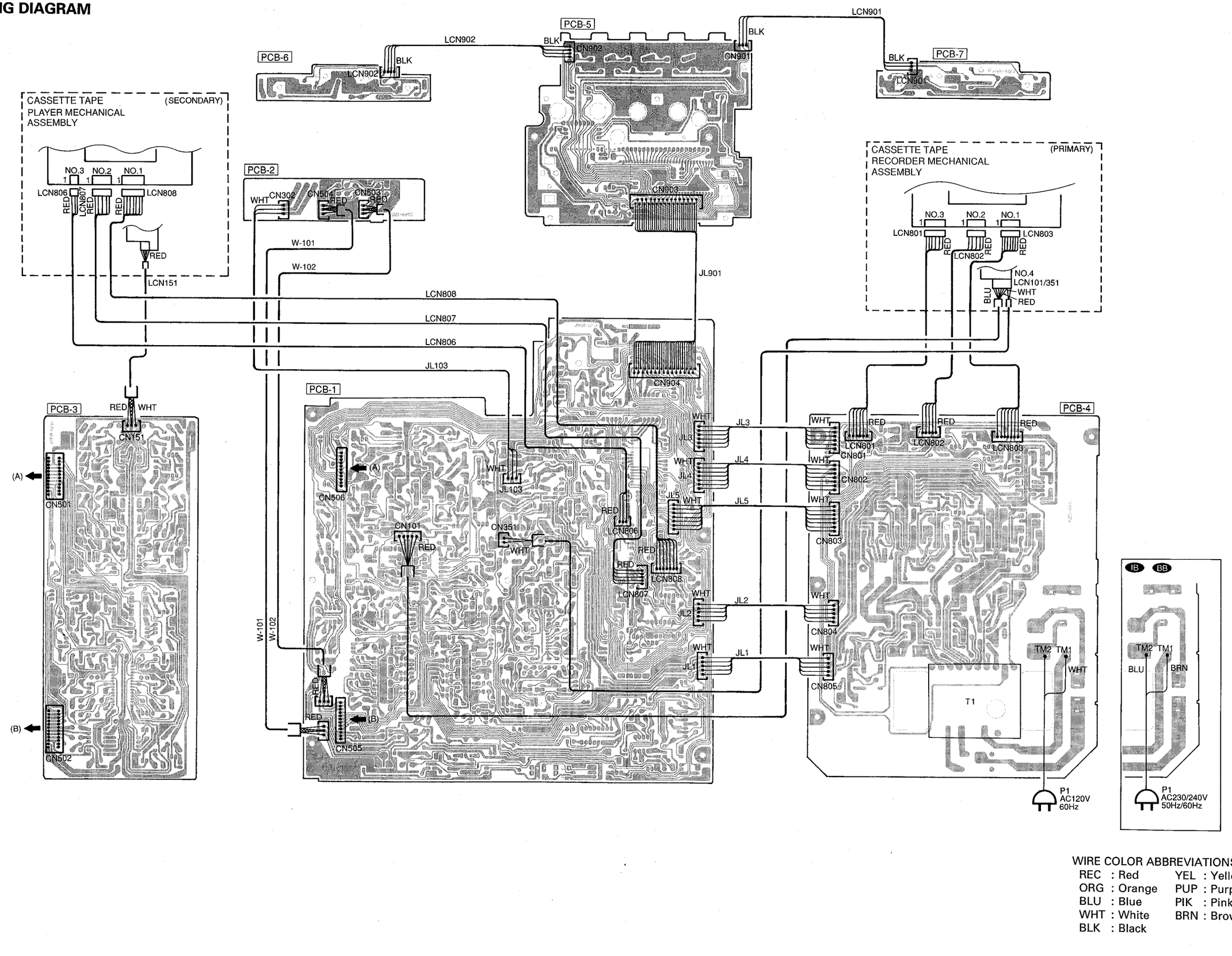
2-2	F564-280	MTR REEL BLK
2-3	F612-168	CHASSIS BASE BLK
2-4	F623-037	REEL BASE BLK
2-7	FG156-11A	SCREW 2.6×6.4 ZN
2-8	FJ111-17	WASHER 1.7×0.25
2-11	UJ12V-11	WASHER 2.1×0.25T
3	F513-550	PLATE HD BLK (P)
3	F513-619	PLATE HD BLK (S)
3-5	FC52E-36	HEAD BASE
3-9	FK26N-14	HB SP
3-10	FU17M-61	HADKH5560B (P) R/P HEAD
3-10	FU17W-61	HADKH2516B (S) P HEAD
3-11	UG19D-11	SCREW TT 2.0×5 ZN
3-20	AZ13P-00	SPI-320BC
3-21	WG50M-03A	QS LEAD WIRE
4	F525-256	MTR MAIN BLK
5	F567-404	PCB CONTROL BLK (P)
5	F567-405	PCB CONTROL BLK (S)
5-1	F743-065	PCB BASE BLK
5-13	AZ15S-00	GP2S04B
5-17	UE16E-11	PUSH SWITCH
7	FC39L-70	EJECT PREVENTION ARM(L)
8	FC52H-12	SPRING CASSETTE
9	FC52F-15	SLIDE PLATE

Ref. No.	Part No.	Description
10	FD45H-15	LEAD HOLDER
12	FD45G-12	PLAY ARM
14	FD45B-15	CAM GEAR (3R)
15	FD44T-14	SWITCH ARM, REC
16	FD44Y-12	SWITCH ARM(R), PACK
17	FD44V-12	SWITCH ARM(L), METAL (P)
18	FF17G-21, 31	MAIN BELT
20	FJ111-30	WASHER 2.6×0.25
23	FJ111-14	WASHER 2.6×0.5
25	FK28M-15	EJECT PREVENTION SPRING (L)
26	FK28R-11	SLIDE SPRING
29	FR23B-11	FLYWHEEL ASS'Y (ZDC)
30	FR22K-13	FLYWHEEL ASS'Y (RVS)
31	FR20L-21A	PINCH ROLLER ASS'Y(R)
32	FR20M-22	PINCH ROLLER ASS'Y(L)
36	FG114-14	SCREW 2.6×5 ZN
37	UG15S-11A	SCREW
39	UG13U-15	E RING
43	FF17C-12	HOLDER CUSHION(L)
51	F765-263	SOLENOID BLK
52	FL39H-12A	FIXED BAR
53	FL39K-12	PLANGER
84	WH52P-66	WIRE CONNECTOR (R/P) (P)
84	WH52N-04A	WIRE CONNECTOR (PB) (S)
116	UT11R-11	REFLECTION PLATE

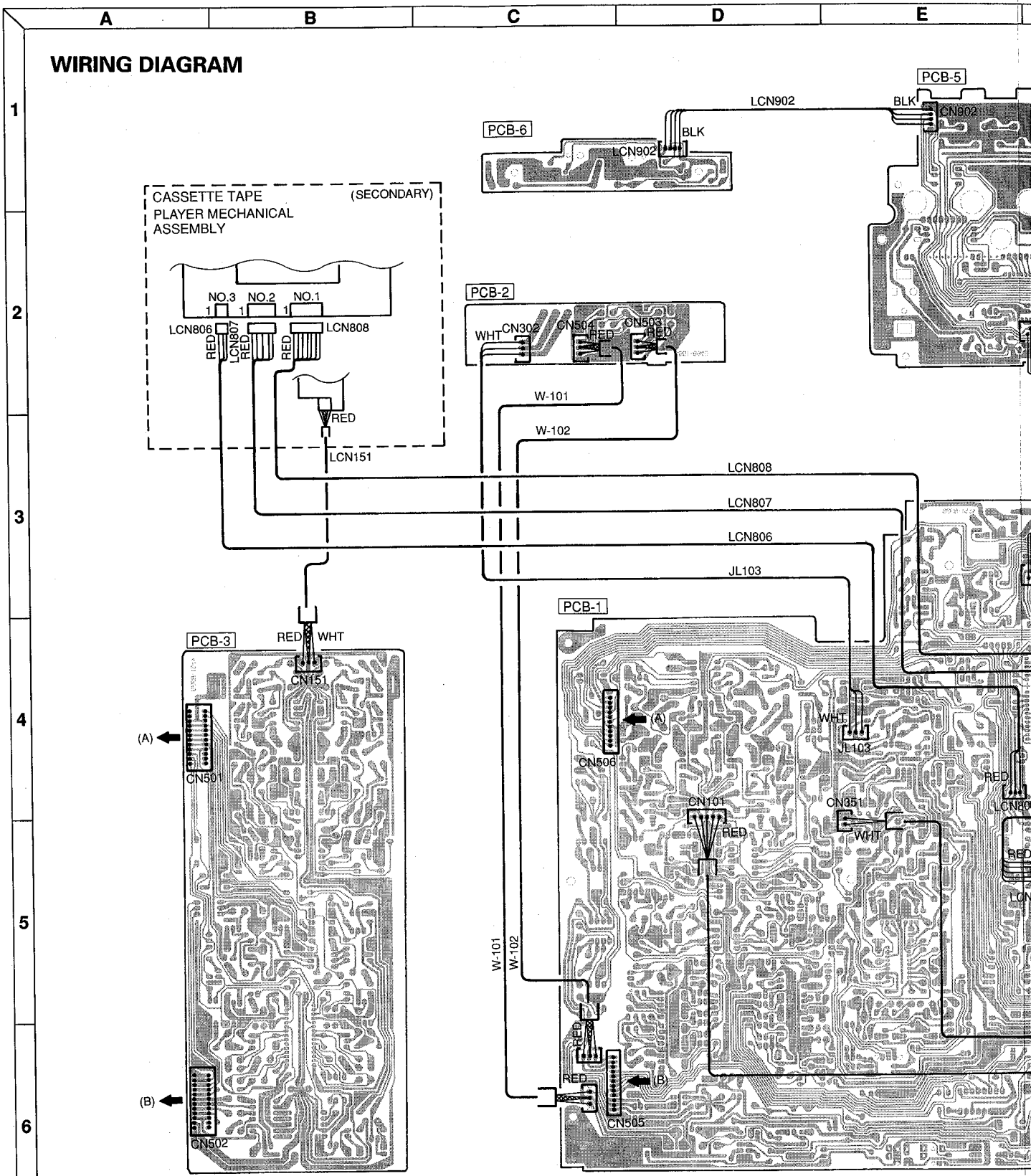
WIRING DIAGRAM

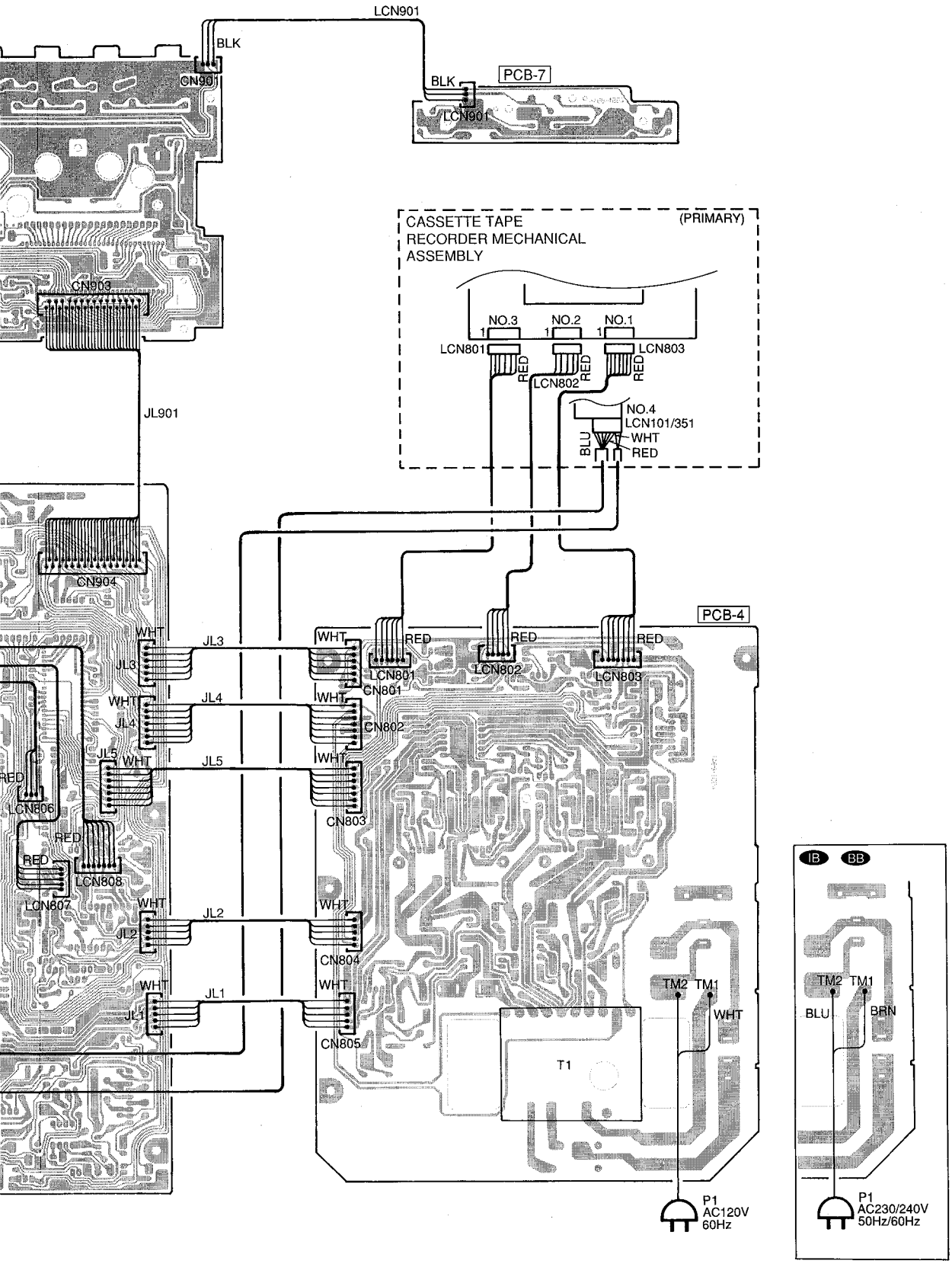


WIRE COLOR ABBREVIATIONS

REC	: Red	YEL	: Yellow
ORG	: Orange	PUP	: Purple
BLU	: Blue	PIK	: Pink
WHT	: White	BRN	: Brown
BLK	: Black		

WIRING DIAGRAM





WIRE COLOR ABBREVIATIONS

REC	: Red	YEL	: Yellow
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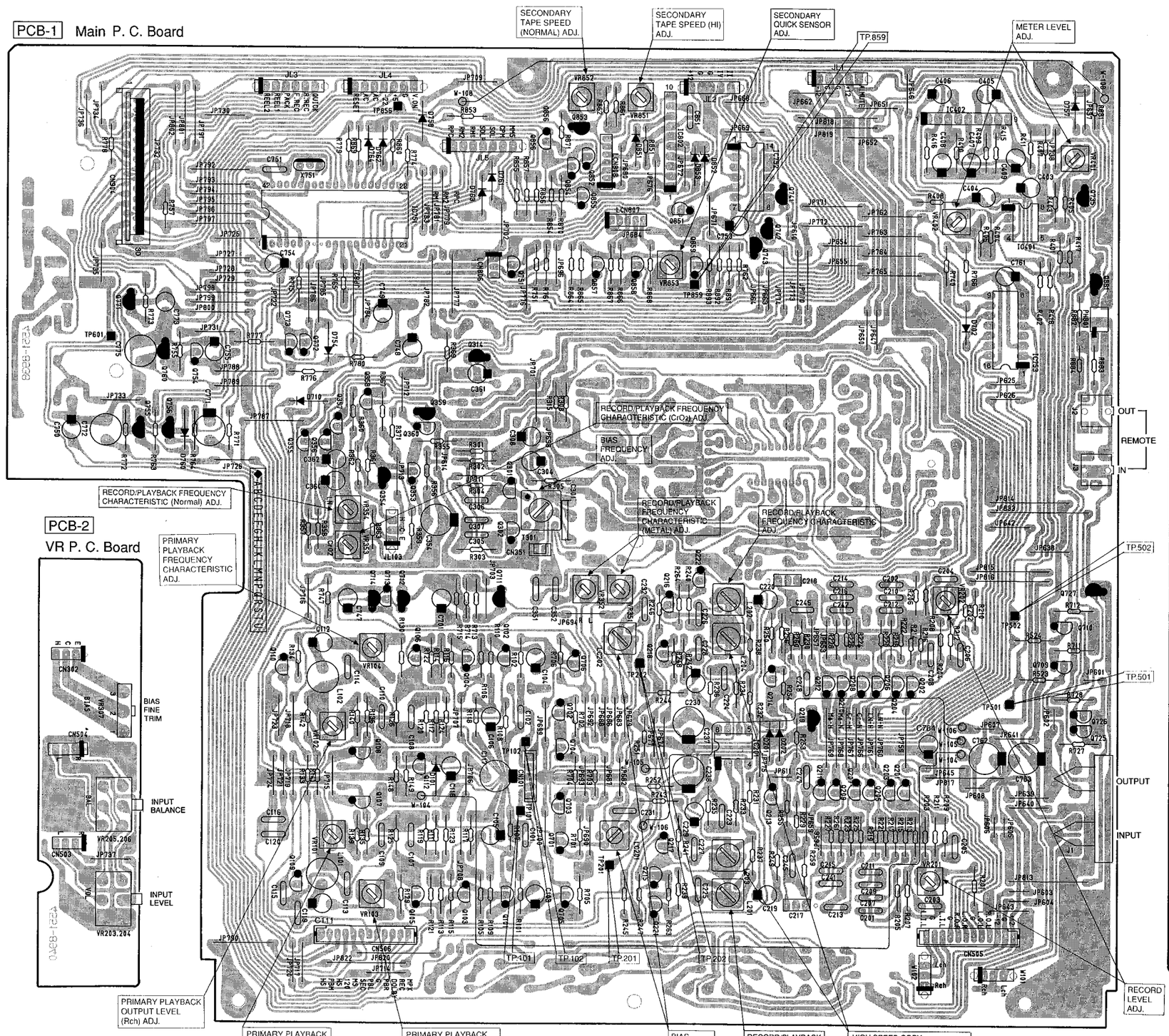
BLK	: Black		

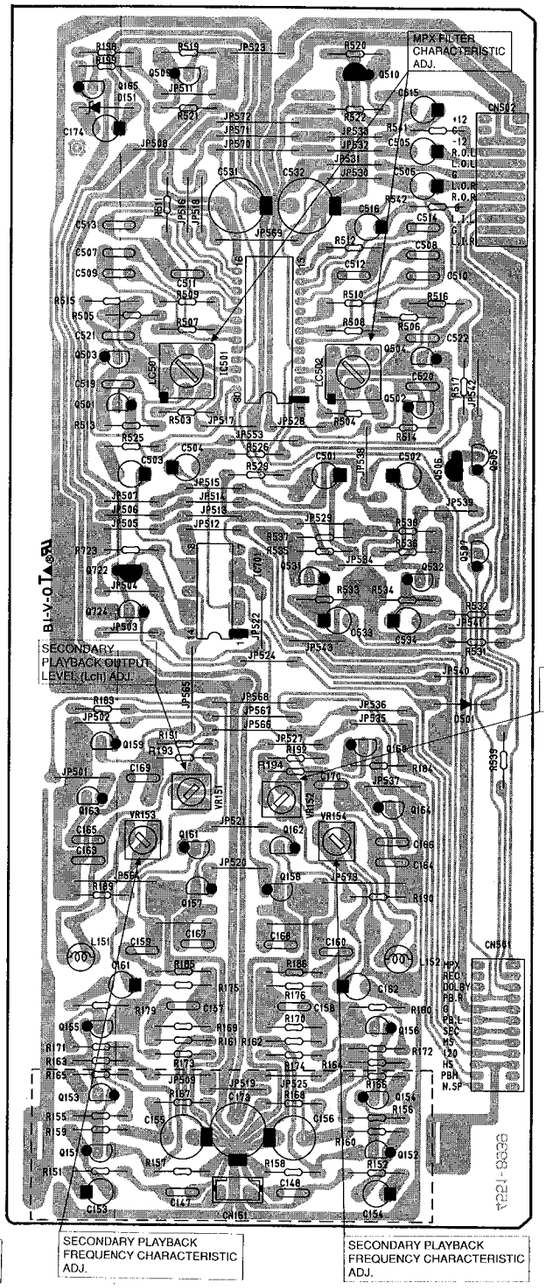
P. C. BOARD (1)

PCB-1 Main P. C. Board



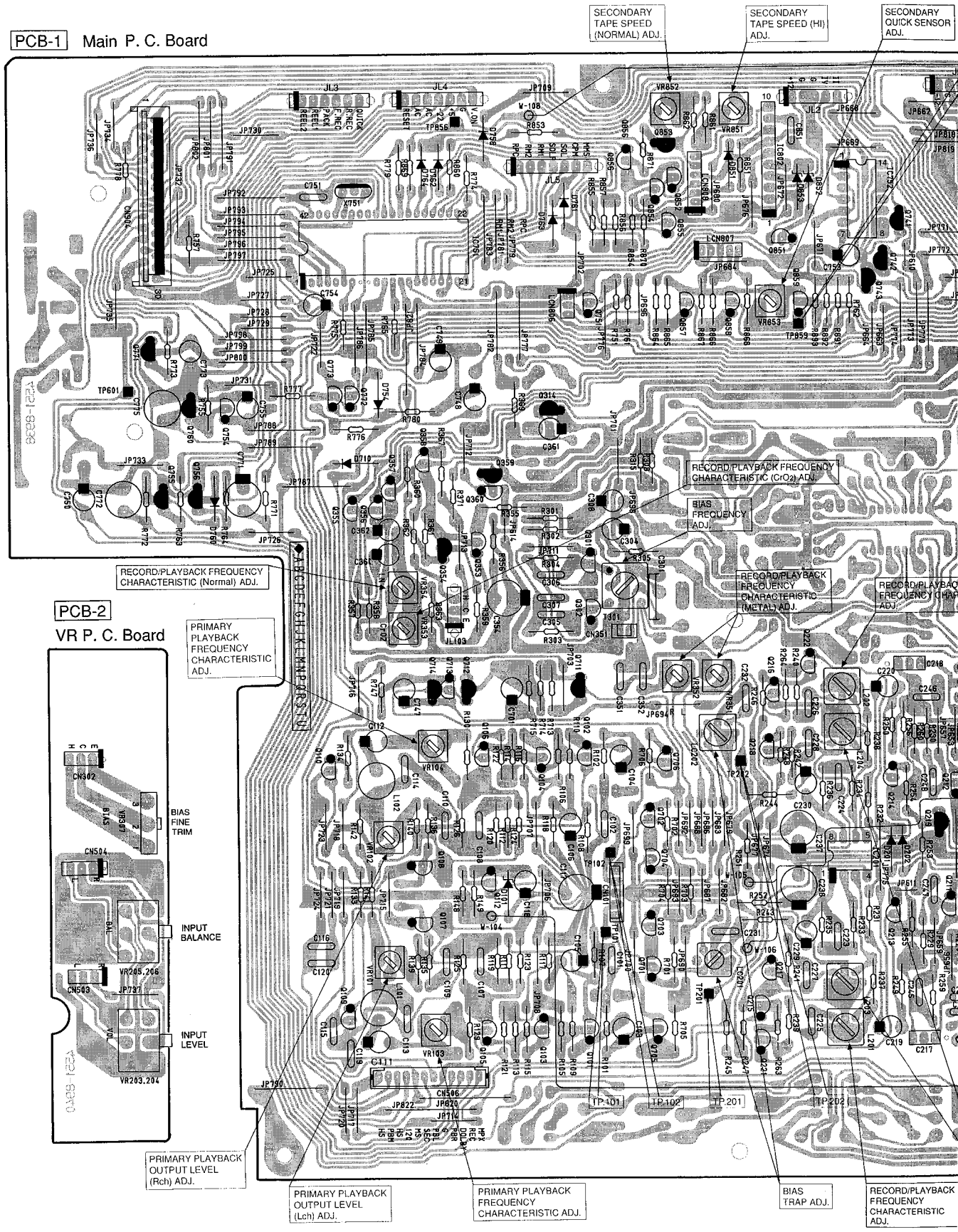
PCB-2 VR P. C. Board

PCB-3 Dolby P. C. Board

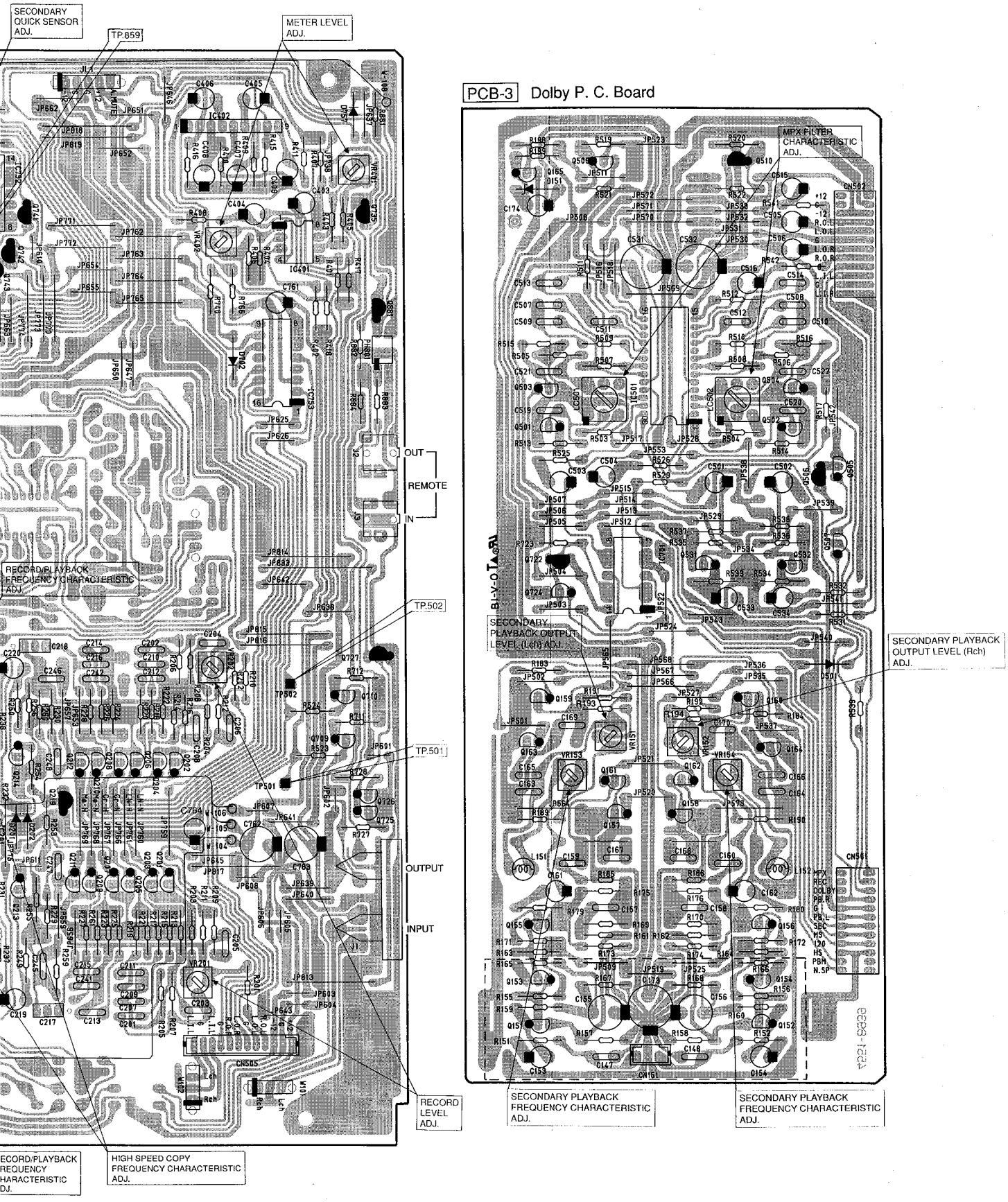

MPX FILTER CHARACTERISTIC ADJ.
SECONDARY PLAYBACK OUTPUT LEVEL (Lch) ADJ.
SECONDARY PLAYBACK OUTPUT LEVEL (Rch) ADJ.
SECONDARY PLAYBACK FREQUENCY CHARACTERISTIC ADJ.
SECONDARY PLAYBACK FREQUENCY CHARACTERISTIC ADJ.

P. C. BOARD (1)

PCB-1 Main P. C. Board

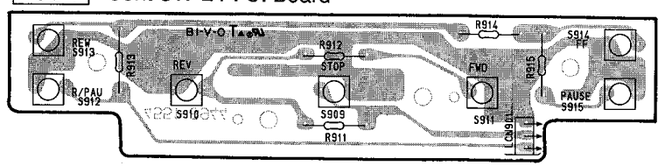


F G H I J

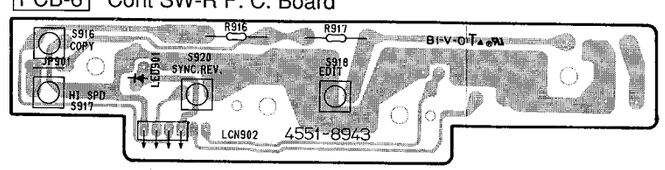

PCB-3 Dolby P. C. Board
SECONDARY QUICK SENSOR ADJ.
TP.859
METER LEVEL ADJ.
OUT
REMOTE
IN
RECORD/PLAYBACK FREQUENCY CHARACTERISTIC ADJ.
TP.502
TP.501
OUTPUT
INPUT
RECORD LEVEL ADJ.
ECORD/PLAYBACK REQUENCY HARACTERISTIC DJ.
HIGH SPEED COPY FREQUENCY CHARACTERISTIC ADJ.
MPX FILTER CHARACTERISTIC ADJ.
SECONDARY PLAYBACK OUTPUT LEVEL (Lch) ADJ.
SECONDARY PLAYBACK OUTPUT LEVEL (Rch) ADJ.
SECONDARY PLAYBACK FREQUENCY CHARACTERISTIC ADJ.
SECONDARY PLAYBACK FREQUENCY CHARACTERISTIC ADJ.

P. C. BOARD (2)

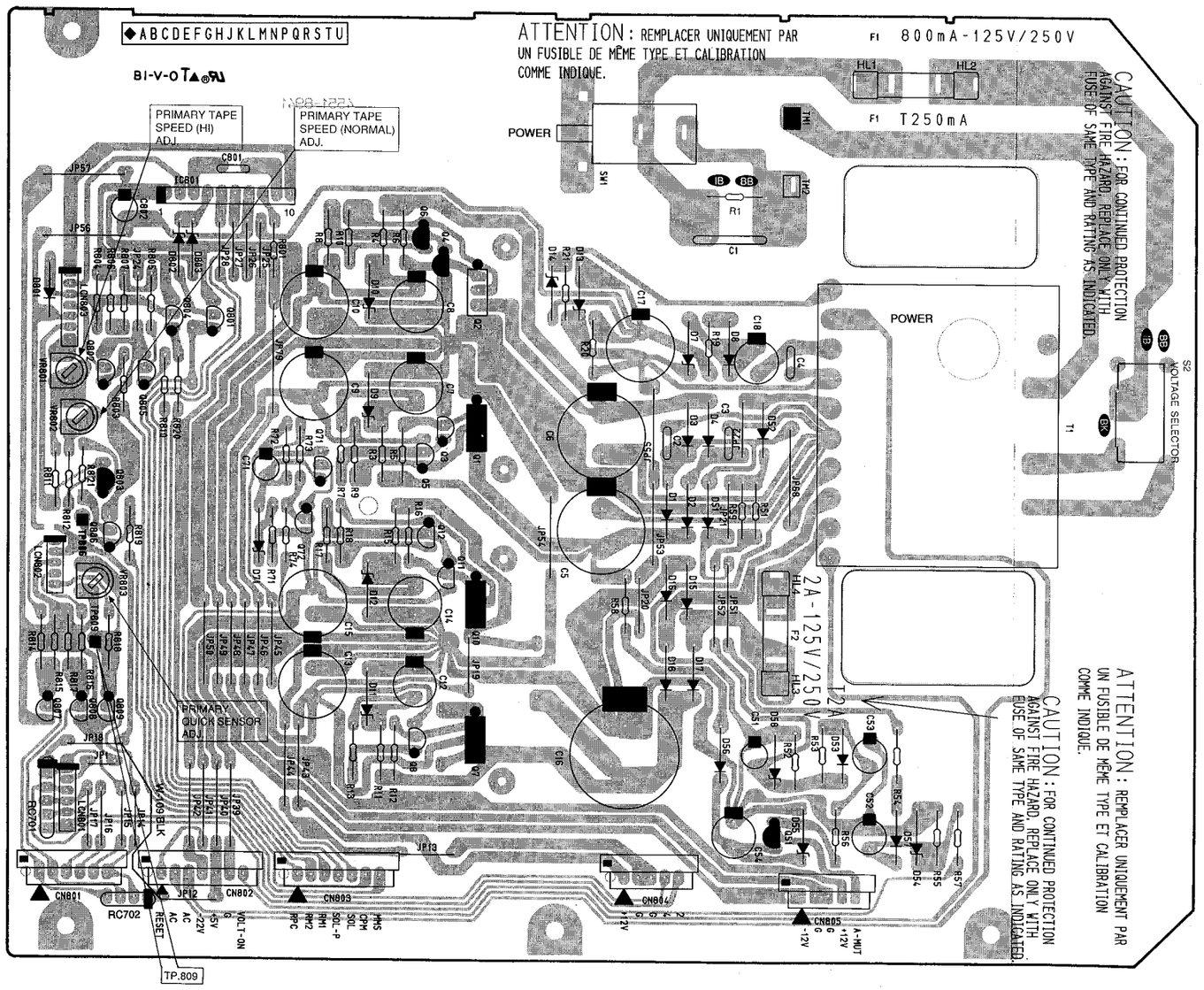
PCB-7 Cont SW-L P. C. Board



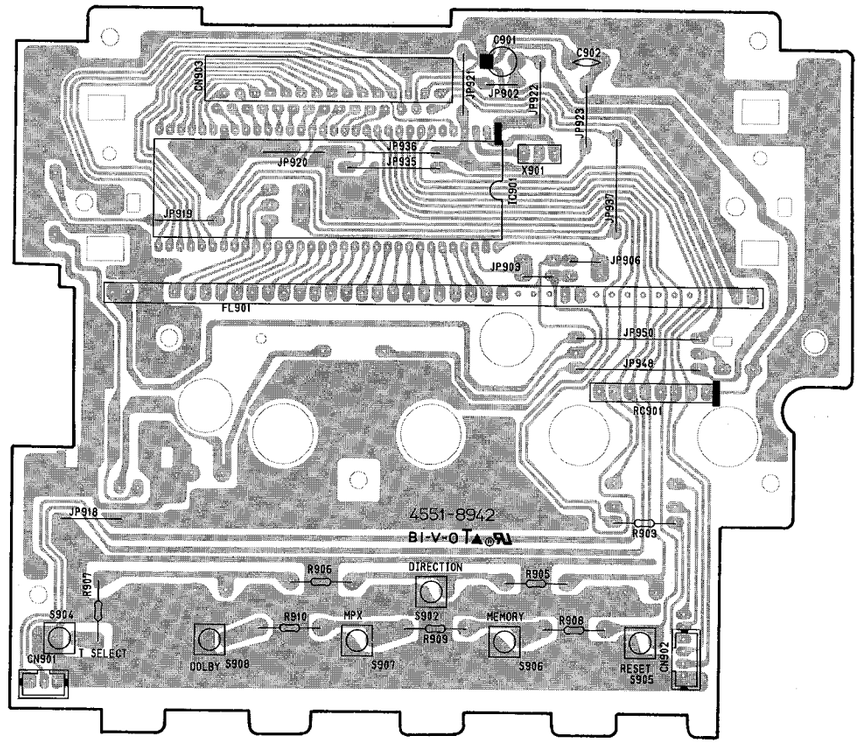
PCB-6 Cont SW-R P. C. Board



PCB-4 Power P. C. Board

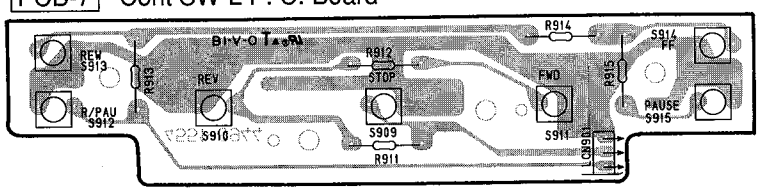

◆ABCDEFGHJKLMNPQRSTU
BI-V-OT
PRIMARY TAPE SPEED (HI) ADJ.
PRIMARY TAPE SPEED (NORMAL) ADJ.
ATTENTION : REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MÊME TYPE ET CALIBRATION COMME INDIQUE.
F1 800mA-125V/250V
F1 T250mA
CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING AS INDICATED.
POWER
S2 VOLTAGE SELECTOR
ATTENTION : REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MÊME TYPE ET CALIBRATION COMME INDIQUE.
2A-125V/250
T2A
CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING AS INDICATED.
PRIMARY QUICK SENSOR ADJ.
TP.809
RC702
CN801
CN802
CN803
CN804
CN805
CN806

PCB-5 Front P. C. Board

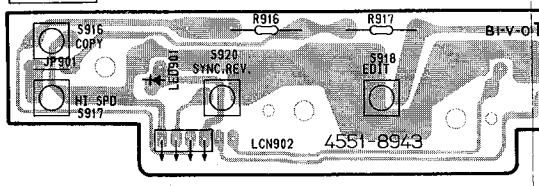


P. C. BOARD (2)

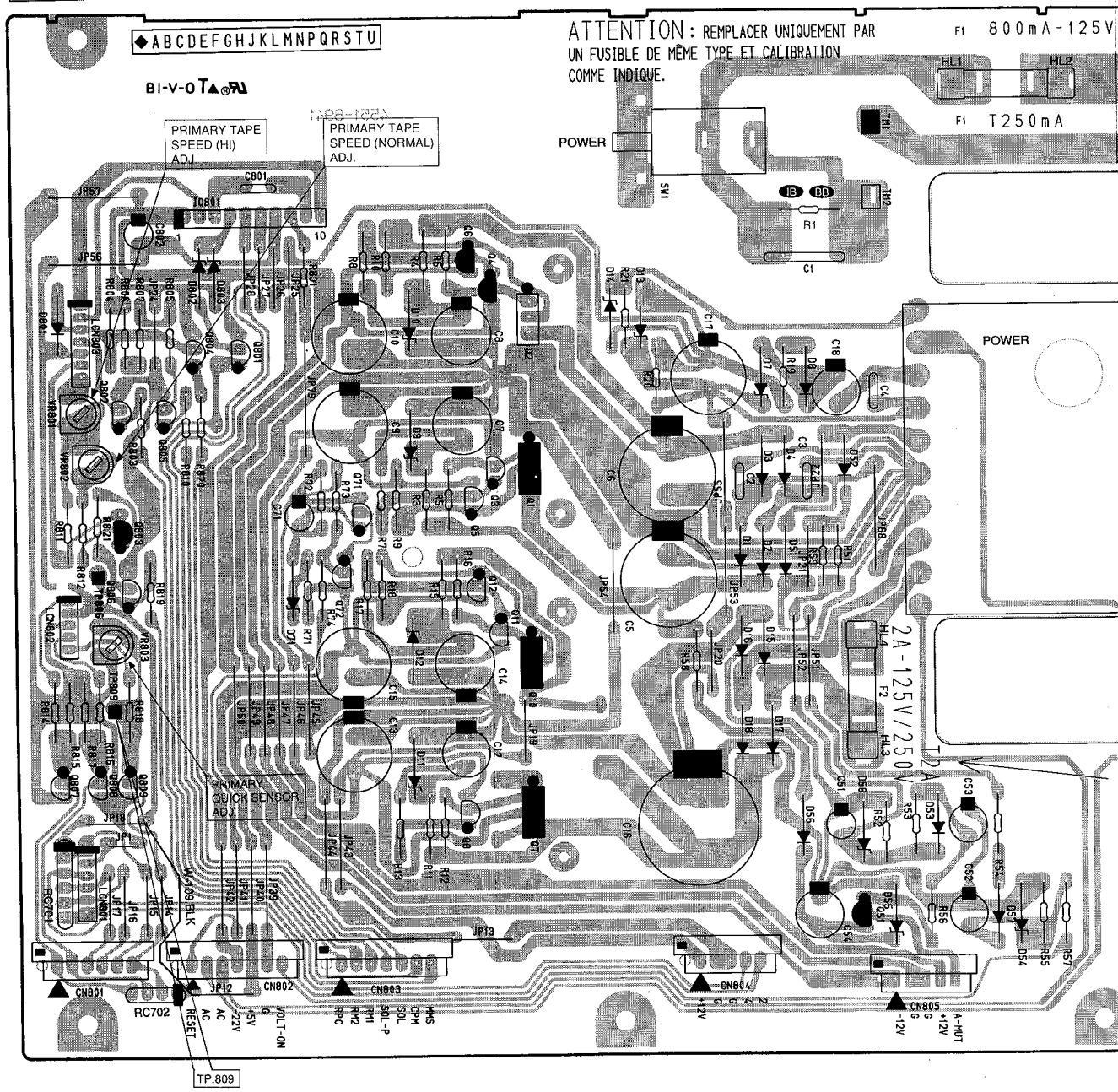
PCB-7 Cont SW-L P. C. Board

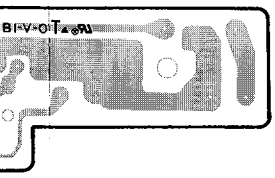


PCB-6 Cont SW-R P. C. Board

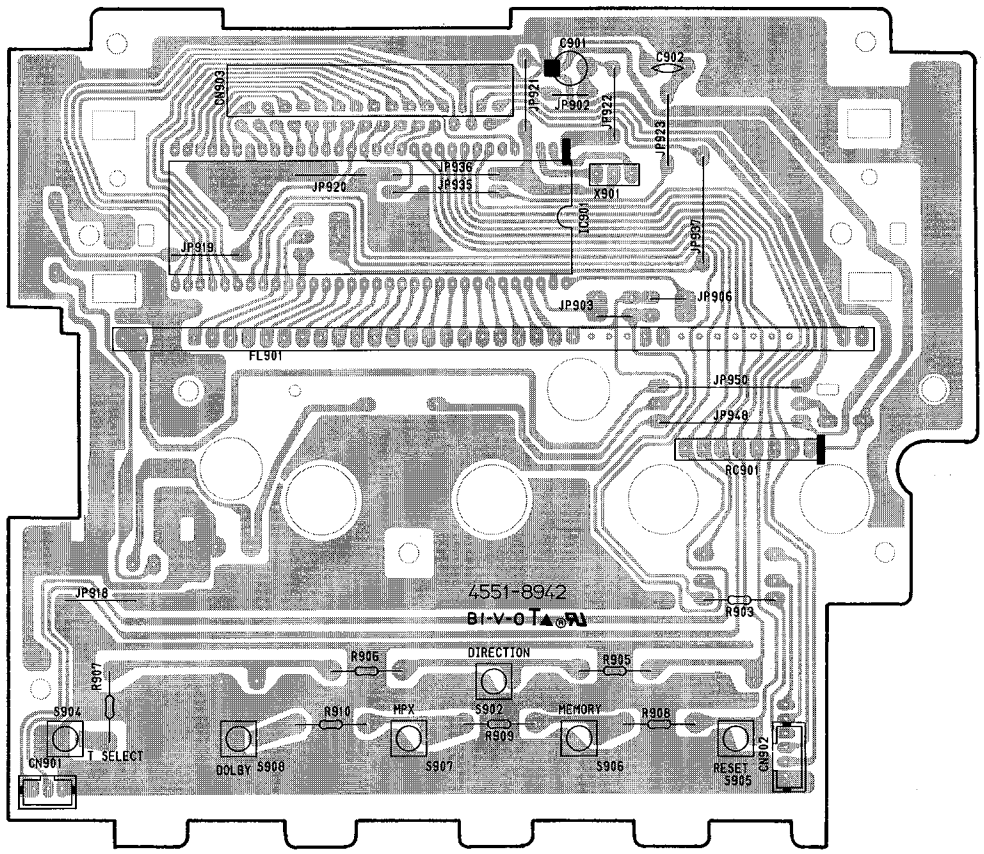


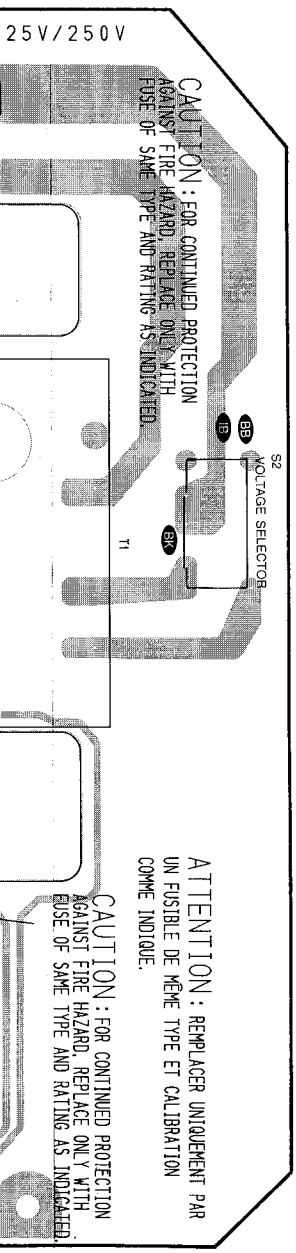
PCB-4 Power P. C. Board





PCB-5 Front P. C. Board




25V/250V
CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING AS INDICATED.
BB
S2
VOLTAGE SELECTOR
T1
ATTENTION : REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MÊME TYPE ET CALIBRATION COMME INDIQUE.
CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD. REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING AS INDICATED.

ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description
		PCB-1 MAIN P. C. BOARD	
		CAPACITORS	
323	C101	5353-101534	CAP, MCA 100P
323	C102	5353-101534	CAP, MCA 100P
315	C103	5345-106C0951	CAP, MINI ELE 10µ/16V
315	C104	5345-106C0951	CAP, MINI ELE 10µ/16V
316	C105	5345-227B0952	CAP, MINI ELE 220µ/10V
316	C106	5345-227B0952	CAP, MINI ELE 220µ/10V
324	C107	5359-6825851	CAP, PPP 6800P
324	C108	5359-6825851	CAP, PPP 6800P
324	C109	5359-6825851	CAP, PPP 6800P
324	C110	5359-6825851	CAP, PPP 6800P
315	C111	5345-106C0951	CAP, MINI ELE 10µ/16V
315	C112	5345-106C0951	CAP, MINI ELE 10µ/16V
325	C113	5359-S010J682	CAP, PPP 6800P
325	C114	5359-S010J682	CAP, PPP 6800P
326	C115	5359-S010J102	CAP, PPP 1000P
326	C116	5359-S010J102	CAP, PPP 1000P
318	C117	5345-477C041	CAP, MINI ELE 470µ/16V
317	C118	5345-336C041	CAP, MINI ELE 33µ/16V
445	C201	5359-S010J152	CAP, PPP 1500P
445	C202	5359-S010J152	CAP, PPP 1500P
446	C203	5359-S010J821	CAP, PPP 820P
446	C204	5359-S010J821	CAP, PPP 820P
447	C205	5359-S010J103	CAP, PPP .01µ
447	C206	5359-S010J103	CAP, PPP .01µ
444	C207	5359-S010J562	CAP, PPP 5600P
444	C208	5359-S010J562	CAP, PPP 5600P
448	C209	5359-S010J822	CAP, PPP 8200P
448	C210	5359-S010J822	CAP, PPP 8200P
457	C211	5359-S010J122	CAP, PPP 1200P
457	C212	5359-S010J122	CAP, PPP 1200P
456	C213	5359-S010J682	CAP, PPP 6800P
456	C214	5359-S010J682	CAP, PPP 6800P
451	C215	5359-S010J152	CAP, PPP 1500P
451	C216	5359-S010J152	CAP, PPP 1500P
452	C217	5359-S010J561	CAP, PPP 560P
452	C218	5359-S010J561	CAP, PPP 560P
439	C219	5345-105F0951	CAP, MINI ELE 1µ/50V
439	C220	5345-105F0951	CAP, MINI ELE 1µ/50V
458	C223	5354-124593	CAP, MYL .12µ
458	C224	5354-124593	CAP, MYL .12µ
453	C225	5359-S010J103	CAP, PPP .01µ
453	C226	5359-S010J103	CAP, PPP .01µ
454	C227	5359-S010J472	CAP, PPP 4700P
454	C228	5359-S010J472	CAP, PPP 4700P
440	C229	5345-225F0951	CAP, MINI ELE 2.2µ/50V
440	C230	5345-225F0951	CAP, MINI ELE 2.2µ/50V
443	C231	5361-4710423	CAP, CER 470P
443	C232	5361-4710423	CAP, CER 470P
442	C237	5345-227C041	CAP, MINI ELE 220µ/16V
442	C238	5345-227C041	CAP, MINI ELE 220µ/16V
455	C241	5359-S010J391	CAP, PPP 390P
455	C242	5359-S010J391	CAP, PPP 390P
449	C245	5359-S010J182	CAP, PPP 1800P
449	C246	5359-S010J182	CAP, PPP 1800P
450	C247	5359-S010J332	CAP, PPP 3300P
450	C248	5359-S010J332	CAP, PPP 3300P
520	C301	5354-S070K153	CAP MYL .015µ
511	C304	5345-106E041	CAP.MINI ELE 10µ/35V
522	C305	5359-S010J682	CAP, PPP 6800P
522	C306	5359-S010J682	CAP, PPP 6800P
523	C307	5359-S010J223	CAP, PPP .022µ
511	C308	5345-106E041	CAP, MINI ELE 10µ/35V
521	C351	5361-1010423	CAP, CER 100P
521	C352	5361-1010423	CAP, CER 100P
512	C354	5345-105F041	CAP, MINI ELE 1µ/50V
511	C360	5345-227B041	CAP, MINI ELE 220µ/10V
513	C361	5345-226D041	CAP, MINI ELE 22µ/25V
515	C362	5345-476D041	CAP, MINI ELE 47µ/25V
725	C403	5345-476D041	CAP, MINI ELE 47µ/25V
725	C404	5345-476D041	CAP, MINI ELE 47µ/25V
724	C405	5345-475F041	CAP, MINI ELE 4.7µ/50V
724	C406	5345-475F041	CAP, MINI ELE 4.7µ/50V
724	C407	5345-475F041	CAP, MINI ELE 4.7µ/50V
724	C408	5345-475F041	CAP, MINI ELE 4.7µ/50V
725	C409	5345-476D041	CAP, MINI ELE 47µ/25V
680	C701	5345-106E041	CAP, MINI ELE 10µ/35V
685	C747	5345-107C041	CAP, MINI ELE 100µ/16V
683	C748	5345-226D041	CAP, MINI ELE 22µ/25V
680	C749	5345-106E041	CAP, MINI ELE 10µ/35V
680	C750	5345-106E041	CAP, MINI ELE 10µ/35V
689	C751	5359-S010J103	CAP, PPP .01µ
680	C753	5345-106E041	CAP, MINI ELE 10µ/35V
686	C754	5345-106F0951	CAP, MINI ELE 10µ/50V
680	C755	5345-106E041	CAP, MINI ELE 10µ/35V
687	C761	5345-476D041	CAP, MINI ELE 47µ/25V
684	C762	5345-107C041	CAP, MINI ELE 100µ/16V
684	C763	5345-107C041	CAP, MINI ELE 100µ/16V
685	C764	5345-107C041	CAP, MINI ELE 100µ/16V
680	C771	5345-106E041	CAP, MINI ELE 10µ/35V
682	C772	5342-476C041	CAP, ELE BP 47µ/16V
681	C773	5342-106D041	CAP, ELE BP 10µ/25V
681	C775	5342-106D041	CAP, ELE BP 10µ/25V
914	C851	5359-S010J103	CAP, PPP .01µ
		RESISTORS	
331	R101	5135-470522	RES, CBN 1/2P 47
331	R102	5135-470522	RES, CBN 1/2P 47
333	R105	5174-S010F223	RES, MTL 1/4P 22K
333	R106	5174-S010F223	RES, MTL 1/4P 22K
334	R107	5174-S010F331	RES, MTL 1/4P 330
334	R108	5174-S010F331	RES, MTL 1/4P 330
335	R109	5135-224522	RES, CBN 1/2P 220K
335	R110	5135-224522	RES, CBN 1/2P 220K
336	R111	5135-332522	RES, CBN 1/2P 3.3K
336	R112	5135-332522	RES, CBN 1/2P 3.3K
337	R113	5135-562522	RES, CBN 1/2P 5.6K
337	R114	5135-562522	RES, CBN 1/2P 5.6K
331	R115	5135-470522	RES, CBN 1/2P 47
331	R116	5135-470522	RES, CBN 1/2P 47
340	R117	5135-681522	RES, CBN 1/2P 680
340	R118	5135-681522	RES, CBN 1/2P 680
341	R119	5135-684522	RES, CBN 1/2P 680K
341	R120	5135-684522	RES, CBN 1/2P 680K
342	R121	5135-101522	RES, CBN 1/2P 100
342	R122	5135-101522	RES, CBN 1/2P 100
343	R123	5135-102522	RES, CBN 1/2P 1K
343	R124	5135-102522	RES, CBN 1/2P 1K
344	R125	5135-822522	RES, CBN 1/2P 8.2K
344	R126	5135-822522	RES, CBN 1/2P 8.2K
346	R129	5135-151522	RES, CBN 1/2P 150
346	R130	5135-151522	RES, CBN 1/2P 150
348	R133	5135-103522	RES, CBN 1/2P 10K
348	R134	5135-103522	RES, CBN 1/2P 10K
349	R135	5135-392522	RES, CBN 1/2P 3.9K
349	R136	5135-392522	RES, CBN 1/2P 3.9K
351	R139	5135-183522	RES, CBN 1/2P 18K
351	R140	5135-183522	RES, CBN 1/2P 18K
352	R141	5135-104522	RES, CBN 1/2P 100K
352	R142	5135-104522	RES, CBN 1/2P 100K
345	R148	5135-101522	RES, CBN 1/2P 100
343	R149	5135-102522	RES, CBN 1/2P 1K
459	R201	5135-152522	RES, CBN 1/2P 1.5K
459	R202	5135-152522	RES, CBN 1/2P 1.5K
460	R203	5135-222522	RES, CBN 1/2P 2.2K
460	R204	5135-222522	RES, CBN 1/2P 2.2K
471	R205	5135-154522	RES, CBN 1/2P 150K
471	R206	5135-154522	RES, CBN 1/2P 150K
462	R207	5135-223522	RES, CBN 1/2P 22K
462	R208	5135-223522	RES, CBN 1/2P 22K
464	R209	5135-822522	RES, CBN 1/2P 8.2K
464	R210	5135-822522	RES, CBN 1/2P 8.2K
464	R211	5135-912522	RES, CBN 1/2P 9.1K
494	R212	5135-912522	RES, CBN 1/2P 9.1K
464	R213	5135-822522	RES, CBN 1/2P 8.2K
494	R214	5135-822522	RES, CBN 1/2P 8.2K
470	R215	5135-332522	RES, CBN 1/2P 3.3K
470	R216	5135-332522	RES, CBN 1/2P 3.3K

Ser. No.	Ref. No.	Part No.	Description
466	R217	5135-272522	RES, CBN 1/2P 2.7K
466	R218	5135-272522	RES, CBN 1/2P 2.7K
467	R219	5135-183522	RES, CBN 1/2P 18K
467	R220	5135-183522	RES, CBN 1/2P 18K
468	R221	5135-333522	RES, CBN 1/2P 33K
468	R222	5135-333522	RES, CBN 1/2P 33K
469	R223	5135-333522	RES, CBN 1/2P 33K
469	R224	5135-333522	RES, CBN 1/2P 33K
463	R225	5135-272522	RES, CBN 1/2P 2.7K
463	R226	5135-272522	RES, CBN 1/2P 2.7K
465	R227	5135-563522	RES, CBN 1/2P 56K
465	R228	5135-563522	RES, CBN 1/2P 56K
472	R229	5135-472522	RES, CBN 1/2P 4.7K
472	R230	5135-472522	RES, CBN 1/2P 4.7K
461	R231	5135-104522	RES, CBN 1/2P 100K
461	R232	5135-104522	RES, CBN 1/2P 100K
473	R233	5135-273522	RES, CBN 1/2P 27K
473	R234	5135-273522	RES, CBN 1/2P 27K
461	R235	5135-563522	RES, CBN 1/2P 56K
461	R236	5135-563522	RES, CBN 1/2P 56K
460	R237	5135-222522	RES, CBN 1/2P 2.2K
460	R238	5135-222522	RES, CBN 1/2P 2.2K
474	R239	5135-151522	RES, CBN 1/2P 150
474	R240	5135-151522	RES, CBN 1/2P 150
479	R241	5135-561522	RES, CBN 1/2P 560
479	R242	5135-561522	RES, CBN 1/2P 560
463	R243	5135-103522	RES, CBN 1/2P 10K
463	R244	5135-103522	RES, CBN 1/2P 10K
463	R245	5135-103522	RES, CBN 1/2P 10K
463	R246	5135-103522	RES, CBN 1/2P 10K
463	R247	5135-103522	RES, CBN 1/2P 10K
463	R248	5135-103522	RES, CBN 1/2P 10K
460	R249	5135-222522	RES, CBN 1/2P 2.2K
460	R250	5135-222522	RES, CBN 1/2P 2.2K
475	R251	5135-331522	RES, CBN 1/2P 330
475	R252	5135-331522	RES, CBN 1/2P 330
476	R253	5135-472522	RES, CBN 1/2P 4.7K
476	R254	5135-472522	RES, CBN 1/2P 4.7K
463	R255	5135-103522	RES, CBN 1/2P 10K
463	R256	5135-103522	RES, CBN 1/2P 10K
477	R259	5135-823522	RES, CBN 1/2P 82K
477	R260	5135-823522	RES, CBN 1/2P 82K
478	R263	5135-680522	RES, CBN 1/2P 68
478	R264	5135-680522	RES, CBN 1/2P 68
526	R301	5135-6R8522	RES, CBN 1/2P 6.8
526	R302	5135-6R8522	RES, CBN 1/2P 6.8
527	R303	5135-393522	RES, CBN 1/2P 39K
527	R304	5135-393522	RES, CBN 1/2P 39K
528	R308	5135-820522	RES, CBN 1/2P 82
528	R315	5135-820522	RES, CBN 1/2P 82
529	⚠ R355	5102-1005116	RES, FUSE 10
530	R356	5135-184522	RES, CBN 1/2P 180K
532	R357	5135-271522	RES, CBN 1/2P 270
531	R358	5135-102522	RES, CBN 1/2P 1K
531	R359	5135-102522	RES, CBN 1/2P 1K
533	R360	5135-153522	RES, CBN 1/2P 15K
534	R361	5135-564522	RES, CBN 1/2P 560K
536	R362	5135-221522	RES, CBN 1/2P 220
533	R363	5135-153522	RES, CBN 1/2P 15K
535	R367	5135-101522	RES, CBN 1/2P 100
538	R369	5135-222522	RES, CBN 1/2P 2.2K
537	R371	5135-103522	RES, CBN 1/2P 10K
730	R401	5135-102522	RES, CBN 1/2P 1K
730	R402	5135-102522	RES, CBN 1/2P 1K
731	R403	5135-222522	RES, CBN 1/2P 2.2K
731	R404	5135-222522	RES, CBN 1/2P 2.2K
732	R405	5135-102522	RES, CBN 1/2P 1K
732	R406	5135-102522	RES, CBN 1/2P 1K
733	R407	5135-331522	RES, CBN 1/2P 330
733	R408	5135-331522	RES, CBN 1/2P 330
734	R409	5135-334522	RES, CBN 1/2P 330K
734	R410	5135-334522	RES, CBN 1/2P 330K
733	R411	5135-331522	RES ,CBN 1/2P 330
735	R415	5135-103522	RES, CBN 1/2P 10K
735	R416	5135-103522	RES, CBN 1/2P 10K
736	R417	5135-104522	RES CBN 1/2P 100K
736	R418	5135-104522	RES, CBN 1/2P 100K
693	R523	5135-222522	RES, CBN 1/2P 2.2K
693	R524	5135-222522	RES, CBN 1/2P 2.2K
691	R701	5135-103522	RES, CBN 1/2P 10K
691	R702	5135-103522	RES, CBN 1/2P 10K
692	R703	5135-392522	RES, CBN 1/2P 3.9K
692	R704	5135-392522	RES, CBN 1/2P 3.9K
691	R705	5135-103522	RES, CBN 1/2P 10K
691	R706	5135-103522	RES, CBN 1/2P 10K
694	R711	5135-222522	RES, CBN 1/2P 2.2K
694	R712	5135-222522	RES, CBN 1/2P 2.2K
694	R713	5135-222522	RES, CBN 1/2P 2.2K
695	R714	5135-103522	RES, CBN 1/2P 10K
695	R715	5135-103522	RES, CBN 1/2P 10K
694	R727	5135-222522	RES, CBN 1/2P 2.2K
694	R728	5135-222522	RES, CBN 1/2P 2.2K
715	R740	5135-473522	RES, CBN 1/2P 47K
697	R747	5135-102522	RES, CBN 1/2P 1K
698	R751	5135-223522	RES, CBN 1/2P 22K
699	R755	5135-472522	RES, CBN 1/2P 4.7K
698	R757	5135-223522	RES, CBN 1/2P 22K
715	R761	5135-473522	RES, CBN 1/2P 47K
715	R762	5135-473522	RES, CBN 1/2P 47K
697	R763	5135-102522	RES, CBN 1/2P 1K
697	R764	5135-102522	RES, CBN 1/2P 1K
697	R765	5135-102522	RES, CBN 1/2P 1K
700	R766	5135-331522	RES, CBN 1/2P 330
697	R771	5135-102522	RES, CBN 1/2P 1K
697	R772	5135-102522	RES, CBN 1/2P 1K
697	R773	5135-102522	RES, CBN 1/2P 1K
697	R774	5135-102522	RES, CBN 1/2P 1K
697	R775	5135-102522	RES, CBN 1/2P 1K
697	R776	5135-102522	RES, CBN 1/2P 1K
696	R777	5135-562522	RES, CBN 1/2P 5.6K
697	R778	5135-102522	RES, CBN 1/2P 1K
697	R779	5135-102522	RES, CBN 1/2P 1K
696	R780	5135-562522	RES, CBN 1/2P 5.6K
918	⚠ R851	5102-1005116	RES, FUSE 10
920	R853	5135-103522	RES, CBN 1/2P 10K
921	R854	5135-150522	RES, CBN 1/2P 15
921	R855	5135-150522	RES, CBN 1/2P 15
921	R856	5135-150522	RES, CBN 1/2P 15
921	R857	5135-150522	RES, CBN 1/2P 15
920	R860	5135-103522	RES, CBN 1/2P 10K
923	R861	5174-S010F243	RES, MTL 1/4P 24K
919	R862	5174-S010F113	RES, MTL 1/4P 11K
922	R864	5135-222522	RES, CBN 1/2P 2.2K
924	R865	5135-223522	RES, CBN 1/2P 22K
922	R866	5135-222522	RES, CBN 1/2P 2.2K
924	R867	5135-223522	RES, CBN 1/2P 22K
925	R868	5135-471522	RES, CBN 1/2P 470
920	R869	5135-103522	RES, CBN 1/2P 10K
920	R870	5135-103522	RES, CBN 1/2P 10K
927	R871	5135-224522	RES, CBN 1/2P 220K
890	R881	5135-392522	RES, CBN 1/2P 3.9K
889	R882	5135-470522	RES, CBN 1/2P 47
892	R883	5135-271522	RES, CBN 1/2P 270
891	R884	5135-473522	RES, CBN 1/2P 47K
926	R891	5135-473522	RES, CBN 1/2P 47K
926	R892	5135-473522	RES, CBN 1/2P 47K
926	R893	5135-473522	RES, CBN 1/2P 47K

INTEGRATED CIRCUITS

421	IC201	5653-UPC4570C	IC, LINEAR
721	IC401	5652-NJM4558D	IC, MONO
722	IC402	5653-BA6138	IC, LINEAR
851	IC751	5654-MN15542	IC, DIGITAL
663	IC752	5654-TC4011BP	IC, DIGITAL
662	IC753	5654-TC4051BP	IC, DIGITAL
901	IC802	5653-BA6229	IC, LINEAR

TRANSISTORS

301	Q101	5613-1775(F)	XISTOR, NPN R
301	Q102	5613-1775(F)	XISTOR, NPN R

Ser. No.	Ref. No.	Part No.	Description
301	Q103	5613-1775(F)	XISTOR, NPN R
301	Q104	5613-1775(F)	XISTOR, NPN R
302	Q105	5613-2320L(F)	XISTOR, NPN R
302	Q106	5613-2320L(F)	XISTOR, NPN R
303	Q107	5613-C114TS	XISTOR, NPN R
303	Q108	5613-C114TS	XISTOR, NPN R
304	Q109	5613-2878(B)	XISTOR, NPN R
304	Q110	5613-2878(B)	XISTOR, NPN R
305	Q112	5613-2320(F)	XISTOR, NPN R
422	Q201	5613-C114YS	XISTOR, NPN R
422	Q202	5613-C114YS	XISTOR, NPN R
422	Q203	5613-C114YS	XISTOR, NPN R
422	Q204	5613-C114YS	XISTOR, NPN R
422	Q205	5613-C114YS	XISTOR, NPN R
422	Q206	5613-C114YS	XISTOR, NPN R
422	Q207	5613-C114YS	XISTOR, NPN R
422	Q208	5613-C114YS	XISTOR, NPN R
422	Q209	5613-C114YS	XISTOR, NPN R
422	Q210	5613-C114YS	XISTOR, NPN R
422	Q211	5613-C114YS	XISTOR, NPN R
422	Q212	5613-C114YS	XISTOR, NPN R
424	Q213	5613-2878(B)	XISTOR, NPN R
424	Q214	5613-2878(B)	XISTOR, NPN R
423	Q215	5613-C114TS	XISTOR, NPN R
423	Q216	5613-C114TS	XISTOR, NPN R
423	Q217	5613-C114TS	XISTOR, NPN R
423	Q218	5613-C114TS	XISTOR, NPN R
425	Q219	5611-A114YS	XISTOR, PNP R
426	Q221	5613-C114TS	XISTOR, NPN R
426	Q222	5613-C114TS	XISTOR, NPN R
481	Q301	5613-2320(F)	XISTOR, NPN R
481	Q302	5613-2320(F)	XISTOR, NPN R
484	Q314	5611-A114YS	XISTOR, PNP R
482	Q353	5613-2120(Y)	XISTOR, NPN R
486	Q354	5611-933S(S)	XISTOR, PNP R
483	Q355	5613-C124ES	XISTOR, NPN R
483	Q356	5613-C124ES	XISTOR, NPN R
483	Q357	5613-C124ES	XISTOR, NPN R
482	Q358	5613-2120(Y)	XISTOR, NPN R
485	Q359	5611-A114TS	XISTOR, PNP R
483	Q360	5613-C124ES	XISTOR, NPN R
665	Q701	5613-2240(BL)	XISTOR, NPN R
665	Q702	5613-2240(BL)	XISTOR, NPN R
665	Q703	5613-2240(BL)	XISTOR, NPN R
665	Q704	5613-2240(BL)	XISTOR, NPN R
668	Q705	5613-2878(B)	XISTOR, NPN R
668	Q706	5613-2878(B)	XISTOR, NPN R
668	Q709	5613-2878(B)	XISTOR, NPN R
668	Q710	5613-2878(B)	XISTOR, NPN R
669	Q711	5611-970(BL)	XISTOR, PNP R
670	Q712	5611-A114YS	XISTOR, PNP R
666	Q713	5613-C114YS	XISTOR, NPN R
670	Q714	5611-A114YS	XISTOR, PNP R
673	Q725	5613-C114TS	XISTOR, NPN R
673	Q726	5613-C114TS	XISTOR, NPN R
670	Q727	5611-A114YS	XISTOR, PNP R
670	Q735	5611-A114YS	XISTOR, PNP R
670	Q741	5611-A114YS	XISTOR, PNP R
670	Q742	5611-A114YS	XISTOR, PNP R
670	Q743	5611-A114YS	XISTOR, PNP R
666	Q751	5613-C114YS	XISTOR, NPN R
666	Q754	5613-C114YS	XISTOR, NPN R
670	Q755	5611-A114YS	XISTOR, PNP R
672	Q756	5611-933S(S)	XISTOR, PNP R
670	Q760	5611-A114YS	XISTOR, PNP R
670	Q771	5611-A114YS	XISTOR, PNP R
673	Q772	5613-C114TS	XISTOR, NPN R
666	Q773	5613-C114YS	XISTOR, NPN R
888	Q851	5613-C114YS	XISTOR, PNP R
904	Q852	5613-2925(T)	XISTOR, NPN R
903	Q853	5611-933S(S)	XISTOR, PNP R
904	Q854	5613-2925(T)	XISTOR, NPN R
904	Q855	5613-2925(T)	XISTOR, NPN R
905	Q856	5613-1740S(S)	XISTOR, NPN R
905	Q857	5613-1740S(S)	XISTOR, NPN R
905	Q858	5613-1740S(S)	XISTOR, NPN R
907	Q859	5613-2320(F)	XISTOR, NPN R
906	Q881	5611-A143ES	XISTOR, PNP R
		DIODES	
307	D101	5635-HZ11B2L	DIODE, ZENER
430	D201	5631-1S2473	DIODE, DET
430	D202	5631-1S2473	DIODE, DET
675	D702	5631-1S2473	DIODE, DET
675	D710	5631-1S2473	DIODE, DET
675	D754	5631-1S2473	DIODE, DET
675	D757	5631-1S2473	DIODE, DET
675	D758	5631-1S2473	DIODE, DET
675	D760	5631-1S2473	DIODE, DET
675	D761	5631-1S2473	DIODE, DET
675	D762	5631-1S2473	DIODE, DET
675	D763	5631-1S2473	DIODE, DET
675	D764	5631-1S2473	DIODE, DET
912	D851	5632-S5566B	DIODE, RECT
911	D852	5635-HZ5C2	DIODE, ZENER
910	D853	5635-HZ7C3L	DIODE, ZENER
		COILS	
309	L101	5995-S160J472	COIL W/CORE
309	L102	5995-S160J472	COIL W/CORE
434	L201	5932-11501	COIL CASE, 7
434	L202	5932-11501	COIL CASE, 7
433	L203	5932-11504	COIL CASE, 7
433	L204	5932-11504	COIL CASE, 7
505	T301	5923-10601	OSC COIL,10
		CONTROLS	
311	VR101	5101-S0801203	RES, SEMI FIX 20K
311	VR102	5101-S0801203	RES, SEMI FIX 20K
312	VR103	5101-S0801501	RES, SEMI FIX 500
312	VR104	5101-S0801501	RES, SEMI FIX 500
438	VR201	5101-S0801202	RES, SEMI FIX 2K
438	VR202	5101-S0801202	RES, SEMI FIX 2K
508	VR351	5101-S0801104	RES, SEMI FIX 100K
508	VR352	5101-S0801104	RES, SEMI FIX 100K
509	VR353	5101-S0801203	RES, SEMI FIX 20K
510	VR354	5101-S0801502	RES, SEMI FIX 5K
723	VR401	5101-S0801203	RES, SEMI FIX 20K
723	VR402	5101-S0801203	RES, SEMI FIX 20K
916	VR851	5101-S0801103	RES, SEMI FIX 10K
916	VR852	5101-S0801103	RES, SEMI FIX 10K
917	VR853	5101-S0801502	RES, SEMI FIX 5K
		MISCELLANEOUS	
791	CN101	4443-03201005	CONNECTOR
800	CN201	4443-030185	CONNECTOR
800	CN202	4443-030185	CONNECTOR
792	CN351	4443-03201002	CONNECTOR
825	CN505	4443-01801012	CONNECTOR
824	CN506	4443-01801012	CONNECTOR
795	CN904	4443-05501030	CONNECTOR
781	J1	4484-46	PIN JACK, 4P
782	J2	4451-00184	JACK, 1P
782	J3	4451-00184	JACK, 1P
811	JL1	4242-R0505101	JUMPER LEAD
811	JL2	4242-R0505101	JUMPER LEAD
812	JL3	4242-R0506101	JUMPER LEAD
813	JL4	4242-R0507101	JUMPER LEAD
813	JL5	4242-R0507101	JUMPER LEAD
814	JL901	4242-S0330151	JUMPER LEAD
436	LC201	5214-13801	LC COMPOSITE
436	LC202	5214-13801	LC COMPOSITE
805	LCN806	4163-S0203251	CONNECTOR W/W
806	LCN807	4163-S0205251	CONNECTOR W/W
807	LCN808	4163-S0207251	CONNECTOR W/W
928	PH801	5624-PC817	PHOTO COUPLR
784	TP101	4214-132	TERMINAL
784	TP102	4214-132	TERMINAL
784	TP201	4214-132	TERMINAL
784	TP202	4214-132	TERMINAL

Ser. No.	Ref. No.	Part No.	Description
784	TP501	4214-132	TERMINAL
784	TP502	4214-132	TERMINAL
784	TP856	4214-132	TERMINAL
784	TP859	4214-132	TERMINAL
929	X751	5693-CST4MGW	OSC, CER

PCB-2 VR P. C. BOARD

CONTROLS

763	VR203/204	5113-S1102503	RES, V CBN 16 50K
766	VR205/206	5113-S1103104	RES, V CBN 16 100K
768	VR307	5113-S1104502	RES, V CBN 16 5K

MISCELLANEOUS

799	CN302	4443-030185	CONNECTOR
799	CN503	4443-030185	CONNECTOR
799	CN504	4443-030185	CONNECTOR
815	JL103	4242-R0503141	JUMPER LEAD

PCB-3 DOLBY P. C. BOARD

CAPACITORS

383	C147	5353-101534	CAP, MCA 100P
383	C148	5353-101534	CAP, MCA 100P
375	C153	5345-106C0951	CAP, MINI ELE 10µ/16V
375	C154	5345-106C0951	CAP, MINI ELE 10µ/16V
376	C155	5345-227B0952	CAP, MINI ELE 220µ/10V
376	C156	5345-227B0952	CAP, MINI ELE 220µ/10V
384	C157	5359-8225851	CAP, PPP 8200P
384	C158	5359-8225851	CAP, PPP 8200P
386	C159	5359-8225851	CAP, PPP 8200P
386	C160	5359-8225851	CAP, PPP 8200P
375	C161	5345-106C0951	CAP, MINI ELE 10µ/16V
375	C162	5345-106C0951	CAP, MINI ELE 10µ/16V
387	C163	5359-S010J392	CAP, PPP 3900P
387	C164	5359-S010J392	CAP, PPP 3900P
385	C165	5359-S010J332	CAP, PPP 3300P
385	C166	5359-S010J332	CAP, PPP 3300P
388	C167	5359-S010J682	CAP, PPP 6800P
388	C168	5359-S010J682	CAP, PPP 6800P
389	C169	5359-S010J821	CAP, PPP 820P
389	C170	5359-S010J821	CAP, PPP 820P
378	C173	5345-477C041	CAP, MINI ELE 470µ/16V
377	C174	5345-336C041	CAP, MINI ELE 33µ/16V
640	C501	5345-106C0951	CAP, MINI ELE 10µ/16V
640	C502	5345-106C0951	CAP, MINI ELE 10µ/16V
640	C503	5345-106C0951	CAP, MINI ELE 10µ/16V
640	C504	5345-106C0951	CAP, MINI ELE 10µ/16V
641	C505	5345-106C0951	CAP, MINI ELE 10µ/16V
641	C506	5345-106C0951	CAP, MINI ELE 10µ/16V
645	C507	5359-S010J222	CAP, PPP 2200P
645	C508	5359-S010J222	CAP, PPP 2200P
645	C509	5359-S010J222	CAP, PPP 2200P
645	C510	5359-S010J222	CAP, PPP 2200P
643	C511	5354-564593	CAP, MYL .56µ
643	C512	5354-564593	CAP, MYL .56µ
644	C513	5354-334593	CAP, MYL .33µ
644	C514	5354-334593	CAP, MYL .33µ
641	C515	5345-106C0951	CAP, MINI ELE 10µ/16V
641	C516	5345-106C0951	CAP, MINI ELE 10µ/16V
646	C519	5359-S010J182	CAP, PPP 1800P
646	C520	5359-S010J182	CAP, PPP 1800P
645	C521	5359-S010J222	CAP, PPP 2200P
645	C522	5359-S010J222	CAP, PPP 2200P
642	C531	5345-227B041	CAP, MINI ELE 220µ/10
642	C532	5345-227B041	CAP, MINI ELE 220µ/10
641	C533	5345-106C0951	CAP, MINI ELE 10µ/16V
641	C534	5345-106C0951	CAP, MINI ELE 10µ/16V

RESISTORS

391	R151	5135-470522	RES, CBN 1/2P 47
391	R152	5135-470522	RES, CBN 1/2P 47
393	R155	5174-S010F223	RES, MTL 1/4P 22K
393	R156	5174-S010F223	RES, MTL 1/4P 22K
394	R157	5174-S010F331	RES, MTL 1/4P 330
394	R158	5174-S010F331	RES, MTL 1/4P 330
395	R159	5135-224522	RES, CBN 1/2P 220K
395	R160	5135-224522	RES, CBN 1/2P 220K
396	R161	5135-332522	RES, CBN 1/2P 3.3K
396	R162	5135-332522	RES, CBN 1/2P 3.3K
397	R163	5135-562522	RES, CBN 1/2P 5.6K
397	R164	5135-562522	RES, CBN 1/2P 5.6K
391	R165	5135-470522	RES, CBN 1/2P 47
391	R166	5135-470522	RES, CBN 1/2P 47
399	R167	5135-681522	RES, CBN 1/2P 680
399	R168	5135-681522	RES, CBN 1/2P 680
400	R169	5135-684522	RES, CBN 1/2P 680K
400	R170	5135-684522	RES, CBN 1/2P 680K
401	R171	5135-101522	RES, CBN 1/2P 100
401	R172	5135-101522	RES, CBN 1/2P 100
402	R173	5135-102522	RES, CBN 1/2P 1K
402	R174	5135-102522	RES, CBN 1/2P 1K
403	R175	5135-682522	RES, CBN 1/2P 6.8K
403	R176	5135-682522	RES, CBN 1/2P 6.8K
405	R179	5135-151522	RES, CBN 1/2P 150
405	R180	5135-151522	RES, CBN 1/2P 150
407	R183	5135-103522	RES, CBN 1/2P 10K
407	R184	5135-103522	RES, CBN 1/2P 10K
408	R185	5135-332522	RES, CBN 1/2P 3.3K
408	R186	5135-332522	RES, CBN 1/2P 3.3K
410	R189	5135-183522	RES, CBN 1/2P 18K
410	R190	5135-183522	RES, CBN 1/2P 18K
411	R191	5135-104522	RES, CBN 1/2P 100K
411	R192	5135-104522	RES, CBN 1/2P 100K
409	R193	5135-102522	RES, CBN 1/2P 1K
409	R194	5135-102522	RES, CBN 1/2P 1K
404	R198	5135-4R7522	RES, CBN 1/2P 4.7
402	R199	5135-102522	RES, CBN 1/2P 1K
654	R503	5135-332522	RES, CBN 1/2P 3.3K
654	R504	5135-332522	RES, CBN 1/2P 3.3K
647	R505	5135-822522	RES, CBN 1/2P 8.2K
647	R506	5135-822522	RES, CBN 1/2P 8.2K
650	R507	5135-243522	RES, CBN 1/2P 24K
650	R508	5135-243522	RES, CBN 1/2P 24K
651	R509	5135-561522	RES, CBN 1/2P 560
651	R510	5135-561522	RES, CBN 1/2P 560
652	R511	5135-102522	RES, CBN 1/2P 1K
653	R512	5135-273522	RES, CBN 1/2P 27K
658	R513	5135-105522	RES, CBN 1/2P 1M
658	R514	5135-105522	RES, CBN 1/2P 1M
658	R515	5135-105522	RES, CBN 1/2P 1M
658	R516	5135-105522	RES, CBN 1/2P 1M
657	R517	5135-223522	RES, CBN 1/2P 22K
649	R519	5135-392522	RES, CBN 1/2P 3.9K
649	R520	5135-392522	RES, CBN 1/2P 3.9K
648	R521	5135-682522	RES, CBN 1/2P 6.8K
648	R522	5135-682522	RES, CBN 1/2P 6.8K
656	R525	5135-101522	RES, CBN 1/2P 100
656	R526	5135-101522	RES, CBN 1/2P 100
657	R529	5135-223522	RES, CBN 1/2P 22K
652	R531	5135-102522	RES, CBN 1/2P 1K
652	R532	5135-102522	RES, CBN 1/2P 1K
659	R533	5135-104522	RES, CBN 1/2P 100K
659	R534	5135-104522	RES, CBN 1/2P 100K
652	R535	5135-102522	RES, CBN 1/2P 1K
652	R536	5135-102522	RES, CBN 1/2P 1K
652	R537	5135-102522	RES, CBN 1/2P 1K
652	R538	5135-102522	RES, CBN 1/2P 1K
655	R539	5135-103522	RES, CBN 1/2P 10K
660	R541	5135-221522	RES, CBN 1/2P 220
660	R542	5135-221522	RES, CBN 1/2P 220
714	R723	5135-473522	RES, CBN 1/2P 47K

INTEGRATED CIRCUITS

631	IC501	5653-CXA1330S	IC, LINEAR
661	IC701	5654-TC4066BP	IC, DIGITAL

Ser. No.	Ref. No.	Part No.	Description
		TRANSISTORS	
361	Q151	5613-1775(F)	XISTOR, NPN R
361	Q152	5613-1775(F)	XISTOR, NPN R
361	Q153	5613-1775(F)	XISTOR, NPN R
361	Q154	5613-1775(F)	XISTOR, NPN R
362	Q155	5613-2320L(F)	XISTOR, NPN R
362	Q156	5613-2320L(F)	XISTOR, NPN R
363	Q157	5613-C114TS	XISTOR, NPN R
363	Q158	5613-C114TS	XISTOR, NPN R
367	Q159	5613-2878(B)	XISTOR, NPN R
367	Q160	5613-2878(B)	XISTOR, NPN R
363	Q161	5613-C114TS	XISTOR, NPN R
363	Q162	5613-C114TS	XISTOR, NPN R
368	Q163	5613-C114YS	XISTOR, NPN R
368	Q164	5613-C114YS	XISTOR, NPN R
362	Q165	5613-2320L(F)	XISTOR, NPN R
634	Q501	5613-C114YS	XISTOR, NPN R
634	Q502	5613-C114YS	XISTOR, NPN R
634	Q503	5613-C114YS	XISTOR, NPN R
634	Q504	5613-C114YS	XISTOR, NPN R
634	Q505	5613-C114YS	XISTOR, NPN R
633	Q506	5611-A114YS	XISTOR, PNP R
634	Q507	5613-C114YS	XISTOR, NPN R
635	Q509	5613-2120(Y)	XISTOR, NPN R
632	Q510	5611-950(Y)	XISTOR, PNP R
636	Q531	5613-2320L(F)	XISTOR, NPN R
636	Q532	5613-2320L(F)	XISTOR, NPN R
671	Q722	5611-A114YS	XISTOR, PNP R
667	Q724	5613-C114YS	XISTOR, NPN R
		DIODES	
370	D151	5635-HZ11B2L	DIODE, ZENER
637	D501	5631-1S2473	DIODE, DET
		COILS	
371	L151	5995-S160J472	COIL W/CORE
371	L152	5995-S160J472	COIL W/CORE
		CONTROLS	
372	VR151	5101-S0801203	RES, SEMI FIX 20K
372	VR152	5101-S0801203	RES, SEMI FIX 20K
373	VR153	5101-S0801501	RES, SEMI FIX 500
373	VR154	5101-S0801501	RES, SEMI FIX 500
		MISCELLANEOUS	
793	CN151	4443-03201003	CONNECTOR
826	CN501	4443-01701012	CONNECTOR
827	CN502	4443-01701012	CONNECTOR
638	LC501	5214-13701	LC COMPOSITE
638	LC502	5214-13701	LC COMPOSITE
		PCB-4 POWER P. C. BOARD	
		CAPACITORS	
593	⚠ C1	5352-S010M103	CAP, MTL .01μ
594	C2	5352-S060K104	CAP, MTL .1μ
594	C3	5352-S060K104	CAP, MTL .1μ
594	C4	5352-S060K104	CAP, MTL .1μ
571	C5	5345-228D041	CAP, MINI ELE 2200μ/25V
571	C6	5345-228D041	CAP, MINI ELE 2200μ/25V
572	C7	5345-227C041	CAP, MINI ELE 220μ/16V
572	C8	5345-227C041	CAP, MINI ELE 220μ/16V
573	C9	5345-108C041	CAP, MINI ELE 1000μ/16V
573	C10	5345-108C041	CAP, MINI ELE 1000μ/16V
575	C12	5345-477C041	CAP, MINI ELE 470μ/16V
573	C13	5345-108C041	CAP, MINI ELE 1000μ/16V
572	C14	5345-227C041	CAP, MINI ELE 220μ/16V
576	C15	5345-108B041	CAP, MINI ELE 1000μ/10V
574	C16	5341-109D0958	CAP, ELE 10000μ/25V
577	C17	5345-477E041	CAP, MINI ELE 470μ/35V
578	C18	5345-226F041	CAP, MINI ELE 22μ/50V
578	C51	5345-226F041	CAP, MINI ELE 22μ/50V
579	C52	5345-106F041	CAP, MINI ELE 10μ/50V
579	C53	5345-106F041	CAP, MINI ELE 10μ/50V
580	C54	5345-107D041	CAP, MINI ELE 100μ/25V
581	C71	5345-107B041	CAP, MINI ELE 100μ/10V
866	C801	5359-S010J103	CAP, PPP .01μ
865	C802	5345-106E041	CAP, MINI ELE 10μ/35V
		RESISTORS	
042B	⚠ R1	5135-335522	RES, CBN 1/2P 3.3M (IB) (BB)
595	R3	5135-152522	RES, CBN 1/2P 1.5K
595	R4	5135-152522	RES, CBN 1/2P 1.5K
596	R5	5135-471522	RES, CBN 1/2P 470
596	R6	5135-471522	RES, CBN 1/2P 470
597	R7	5135-101522	RES, CBN 1/2P 100
597	R8	5135-101522	RES, CBN 1/2P 100
598	R9	5135-2R7522	RES, CBN 1/2P 2.7
598	R10	5135-2R7522	RES, CBN 1/2P 2.7
595	R11	5135-152522	RES, CBN 1/2P 1.5K
596	R12	5135-471522	RES, CBN 1/2P 470
597	R13	5135-101522	RES, CBN 1/2P 100
595	R15	5135-152522	RES, CBN 1/2P 1.5K
596	R16	5135-471522	RES, CBN 1/2P 470
597	R17	5135-101522	RES, CBN 1/2P 100
598	R18	5135-2R7522	RES, CBN 1/2P 2.7
599	R19	5135-221522	RES, CBN 1/2P 220
600	R20	5135-223522	RES, CBN 1/2P 22K
600	R21	5135-223522	RES, CBN 1/2P 22K
607	R51	5135-331522	RES, CBN 1/2P 330
608	R52	5135-562522	RES, CBN 1/2P 5.6K
609	R53	5135-154522	RES, CBN 1/2P 150K
610	R54	5135-102522	RES, CBN 1/2P 1K
610	R55	5135-102522	RES, CBN 1/2P 1K
611	R56	5135-104522	RES, CBN 1/2P 100K
612	R57	5135-103522	RES, CBN 1/2P 10K
613	R58	5135-182522	RES, CBN 1/2P 1.8K
607	R59	5135-331522	RES, CBN 1/2P 330
610	R71	5135-102522	RES, CBN 1/2P 1K
614	R72	5135-471522	RES, CBN 1/2P 470
612	R73	5135-103522	RES, CBN 1/2P 10K
610	R74	5135-102522	RES, CBN 1/2P 1K
874	⚠ R801	5102-1005116	RES, FUSE 10
878	R803	5135-103522	RES, CBN 1/2P 10K
879	R804	5135-150522	RES, CBN 1/2P 15
879	R805	5135-150522	RES, CBN 1/2P 15
879	R806	5135-150522	RES, CBN 1/2P 15
879	R807	5135-150522	RES, CBN 1/2P 15
878	R810	5135-103522	RES, CBN 1/2P 10K
881	R811	5174-S010F243	RES, MTL 1/4P 24K
877	R812	5174-S010F113	RES, MTL 1/4P 11K
880	R814	5135-222522	RES, CBN 1/2P 2.2K
882	R815	5135-223522	RES, CBN 1/2P 22K
880	R816	5135-222522	RES, CBN 1/2P 2.2K
882	R817	5135-223522	RES, CBN 1/2P 22K
883	R818	5135-471522	RES, CBN 1/2P 470
878	R819	5135-103522	RES, CBN 1/2P 10K
878	R820	5135-103522	RES, CBN 1/2P 10K
884	R821	5135-224522	RES, CBN 1/2P 220K
		INTEGRATED CIRCUIT	
852	IC801	5653-BA6229	IC, LINEAR
		TRANSISTORS	
541	Q1	5612-1375	XISTOR, PNP A
542	Q2	5614-2012	XISTOR, NPN A
544	Q3	5613-2320(F)	XISTOR, NPN R
543	Q4	5611-999(F)	XISTOR, PNP R
544	Q5	5613-2320(F)	XISTOR, NPN R
543	Q6	5611-999(F)	XISTOR, PNP R
541	Q7	5612-1375	XISTOR, PNP A
544	Q8	5613-2320(F)	XISTOR, NPN R
541	Q10	5612-1375	XISTOR, PNP A
544	Q11	5613-2320(F)	XISTOR, NPN R
544	Q12	5613-2320(F)	XISTOR, NPN R
545	Q51	5611-999(F)	XISTOR, PNP R
546	Q71	5613-2320(F)	XISTOR, NPN R
547	Q72	5611-A124ES	XISTOR, PNP R
858	Q801	5613-C114YS	XISTOR, NPN R
856	Q802	5613-2925(T)	XISTOR, NPN R
855	Q803	5611-933S(S)	XISTOR, PNP R

Ser. No.		Ref. No.	Part No.	Description
856		Q804	5613-2925(T)	XISTOR, NPN R
856		Q805	5613-2925(T)	XISTOR, NPN R
857		Q806	5613-1740S(S)	XISTOR, NPN R
857		Q807	5613-1740S(S)	XISTOR, NPN R
857		Q808	5613-1740S(S)	XISTOR, NPN R
859		Q809	5613-2320(F)	XISTOR, NPN R
			DIODES	
550	⚠	D1	5632-S5566B	DIODE, RECT
550	⚠	D2	5632-S5566B	DIODE, RECT
550	⚠	D3	5632-S5566B	DIODE, RECT
550	⚠	D4	5632-S5566B	DIODE, RECT
550	⚠	D7	5632-S5566B	DIODE, RECT
550	⚠	D8	5632-S5566B	DIODE, RECT
554		D9	5635-HZ12B2L	DIODE, ZENER
554		D10	5635-HZ12B2L	DIODE, ZENER
554		D11	5635-HZ12B2L	DIODE, ZENER
555		D12	5635-HZ6B2L	DIODE, ZENER
556		D13	5635-HZ22-2L	DIODE, ZENER
557		D14	5635-RD5R1EB3	DIODE, ZENER
550	⚠	D15	5632-S5566B	DIODE, RECT
550	⚠	D16	5632-S5566B	DIODE, RECT
550	⚠	D17	5632-S5566B	DIODE, RECT
550	⚠	D18	5632-S5566B	DIODE, RECT
550	⚠	D51	5632-S5566B	DIODE, RECT
550	⚠	D52	5632-S5566B	DIODE, RECT
559		D53	5631-1S2473	DIODE, DET
563		D54	5635-RD5R1EB2	DIODE, ZENER
565		D55	5635-HZ11A2L	DIODE, ZENER
550		D56	5632-S5566B	DIODE, RECT
550		D57	5632-S5566B	DIODE, RECT
564		D58	5635-HZ16-2L	DIODE, ZENER
566		D71	5635-HZ3B2	DIODE, ZENER
864		D801	5632-S5566B	DIODE, RECT
862		D802	5635-HZ5C2	DIODE, ZENER
861		D803	5635-HZ7C3L	DIODE, ZENER
			TRANSFORMERS	
569	⚠	T1	5584-S9401	XFORMER, POWER (BK)
569B	⚠	T1	5584-S9402	XFORMER, POWER (IB) (BB)
			CONTROLS	
868		VR801	5101-S0801103	RES, SEMI FIX 10K
868		VR802	5101-S0801103	RES, SEMI FIX 10K
869		VR803	5101-S0801502	RES, SEMI FIX 5K
			MISCELLANEOUS	
797		CN801	4443-060185	CONNECTOR
798		CN802	4443-070185	CONNECTOR
798		CN803	4443-070185	CONNECTOR
796		CN804	4443-050185	CONNECTOR
796		CN805	4443-050185	CONNECTOR
603	⚠	F1	5732-801031	FUSE (BK)
603B	⚠	F1	5732-251030	FUSE (IB) (BB)
604	⚠	F2	5732-202031	FUSE (BK)
604B	⚠	F2	5732-202030	FUSE (IB) (BB)
601	⚠	HL1	4472-04501	HOLDER, FUSE
601	⚠	HL2	4472-04501	HOLDER, FUSE
601	⚠	HL3	4472-04501	HOLDER, FUSE
601	⚠	HL4	4472-04501	HOLDER, FUSE
803		LCN801	4163-S0206151	CONNECTOR W/W
802		LCN802	4163-S0205151	CONNECTOR W/W
804		LCN803	4163-S0207151	CONNECTOR W/W
871		RC701	5212-S0305473	R COMPOSITE
872		RC702	5212-S0303473	R COMPOSITE
751	⚠	SW1	4433-01301	SWITCH, PU-PW
041B	⚠	SW2	4411-00501102	SWITCH, ROTARY (IB) (BB)
786		TM1	4214-122	TERMINAL
786		TM2	4214-122	TERMINAL
785		TP806	4214-132	TERMINAL
785		TP809	4214-132	TERMINAL

Ser. No.	Ref. No.	Part No.	Description
		PCB-5 FRONT P. C. BOARD	
		CAPACITORS	
835	C901	5345-106D0356	CAP, MINI ELE 10μ/25V
837	C902	5359-S010J103	CAP, PPP.01μ
		RESISTORS	
841	R903	5135-221522	RES, CBN 1/2P 220
842	R905	5135-472522	RES, CBN 1/2P 4.7K
843	R906	5135-682522	RES, CBN 1/2P 6.8K
844	R907	5135-183522	RES, CBN 1/2P 18K
842	R908	5135-472522	RES, CBN 1/2P 4.7K
843	R909	5135-682522	RES, CBN 1/2P 6.8K
844	R910	5135-183522	RES, CBN 1/2P 18K
		INTEGRATED CIRCUIT	
829	IC901	5654-MN187167	IC, DIGITAL
		MISCELLANEOUS	
789	CN901	4443-0301140	CONNECTOR
790	CN902	4443-0401140	CONNECTOR
794	CN903	4443-05401030	CONNECTOR
771	FL901	5722-058	TUBE DISPLAY
839	RC901	5212-S0307123	R COMPOSITE
753	S902	4437-01202	SWITCH, PU-TC
753	S904	4437-01202	SWITCH, PU-TC
753	S905	4437-01202	SWITCH, PU-TC
753	S906	4437-01202	SWITCH, PU-TC
753	S907	4437-01202	SWITCH, PU-TC
753	S908	4437-01202	SWITCH, PU-TC
833	X901	5693-CST4MGW	OSC, CER
		PCB-6 CONT SW-R P. C. BOARD	
		RESISTORS	
848	R916	5135-472522	RES, CBN 1/2P 4.7K
849	R917	5135-682522	RES, CBN 1/2P 6.8K
		MISCELLANEOUS	
809	LCN902	4163-S0104800	CONNECTOR W/W
830	LED901	5637-SEL2410E	LED
757	S916	4437-01201	SWITCH, PU-TC
759	S917	4437-01202	SWITCH, PU-TC
757	S918	4437-01201	SWITCH, PU-TC
757	S920	4437-01201	SWITCH, PU-TC
		PCB-7 CONT SW-L P. C. BOARD	
		RESISTORS	
845	R911	5135-472522	RES, CBN 1/2P 4.7K
846	R912	5135-682522	RES, CBN 1/2P 6.8K
845	R913	5135-472522	RES, CBN 1/2P 4.7K
846	R914	5135-682522	RES, CBN 1/2P 6.8K
847	R915	5135-183522	RES, CBN 1/2P 18K
		MISCELLANEOUS	
808	LCN901	4163-S0103800	CONNECTOR W/W
754	S909	4437-01201	SWITCH, PU-TC
754	S910	4437-01201	SWITCH, PU-TC
754	S911	4437-01201	SWITCH, PU-TC
756	S912	4437-01202	SWITCH, PU-TC
754	S913	4437-01201	SWITCH, PU-TC
754	S914	4437-01201	SWITCH, PU-TC
756	S915	4437-01202	SWITCH, PU-TC

Ser. No.	Ref. No.	Part No.	Description

ABBREVIATIONS IN PARTS LIST

CAPACITORS

CAP, MINI ELE : Electrolytic
CAP, CER : Ceramic
CAP, PPP : Polypropylene
CAP, MYL : Mylar
CAP, MCA : Mica
470μ : 470μF
6800P : 6800PF
.047μ : 0.047μF

RESISTORS

RES, CBN 1/6P : Carbon 1/6W
2.2K : 2.2kΩ
220 : 220Ω
RES, FUSE : Fuse
RES, CEM 5P : Cement 5W
REC, MTL 1P : Metal 1W

TRANSISTORS

XISTOR : Transistor
FET : Field Effect Transistor

CONTROLS

RES, V CBN : Variable Carbon Resistor
RES, SEMI FIX : Semi - fixed Resistors

CHASSIS MISCELLANEOUS

772	⚠ P1		4161-71151	CORD W/PLUG (BK)
772B	⚠ P1		4161-7256	CORD W/PLUG (IB)
772C	⚠ P1		4161-04100	CORD W/PLUG (BB)
773			4161-71184	CORD W/PLUG, RCA TYPE (ACCESSORY) (x2)
788		LUG1	4211-4	LUG, CABINET FRONT
788		LUG2	4211-4	LUG, CABINET FRONT

PACKAGE PARTS LIST

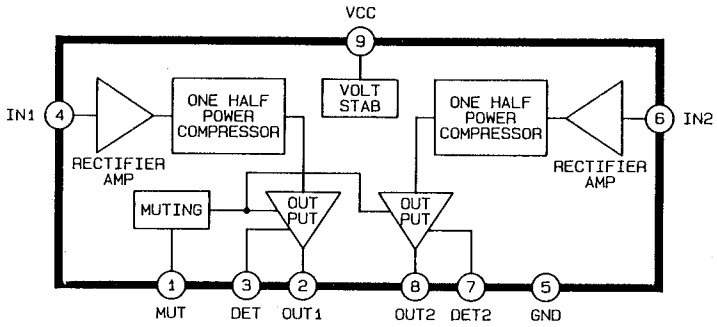
021B	1756-03108	LABEL (x2) (IB)
021C	1756-03111	LABEL (x2) (BB)
022B	1756-06303	LABEL (IB) (BB)
023C	1756-08501	LABEL 240V (BB)
024C	1111-J30319	OWNER GUIDE 240V CAUTION (BB)
109	1111-J30355	OWNER GUIDE (BK) (BB)
109B	1111-J30356	OWNER GUIDE (IB)
110	1113-02501	OWNER CARD (BK)
112	1116-03801	WARRANTY CARD (BK)
113	1119-04501	ATTACH SHEET, SERVICE STATION (BK)
114	1119-01201	ATTACH SHEET, SAFETY (BK)
117A	1221-30201	CARTON BOX (BK) (IB) (BB)
118	1222-7384	CUSHION, R
119	1222-7385	CUSHION, L
121	1223-R0220055	SOFT SHEET, SET FRONT
122	1223-00403012	SOFT SHEET, CASS. LID
123	1241-R0160600	POLYETHY BAG, SET
124	1241-R0123350	POLYETHY BAG, OG

NOTE:

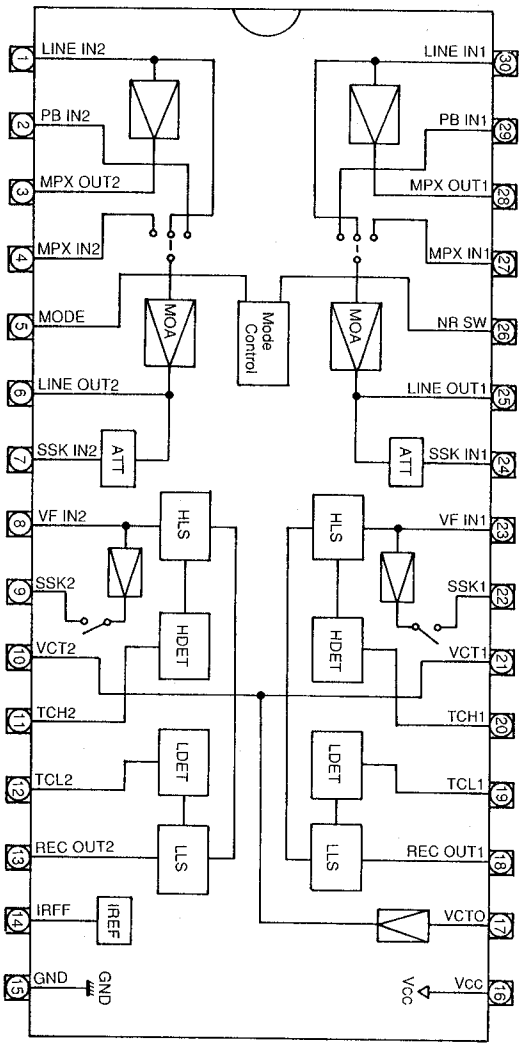
⚠ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

IC BLOCK DIAGRAM

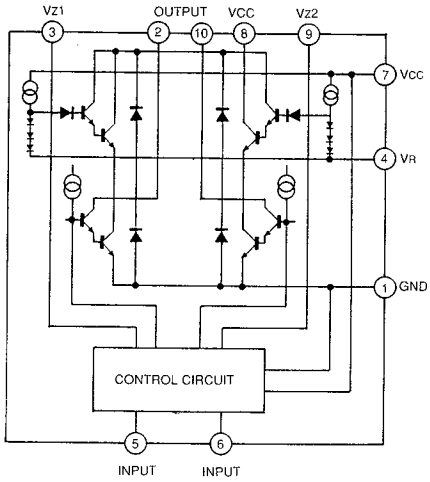
IC402 : BA6138
Signal Level Meter



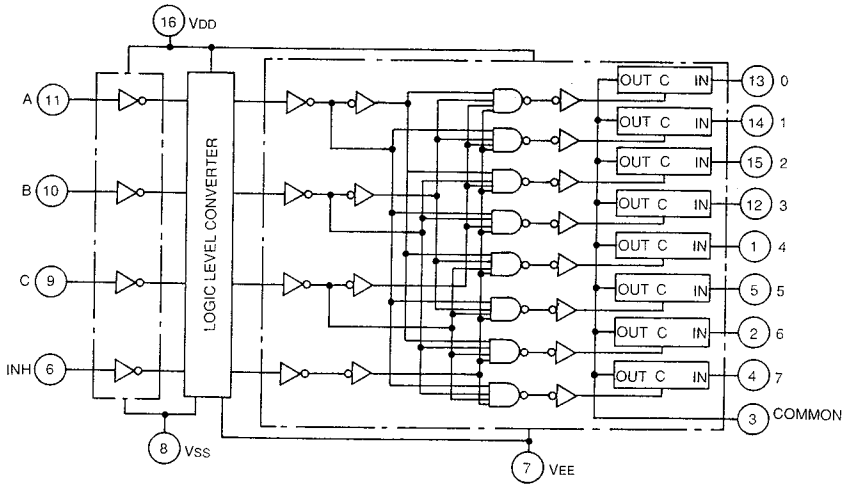
IC501 : CXA1330S
Dolby B/C NR



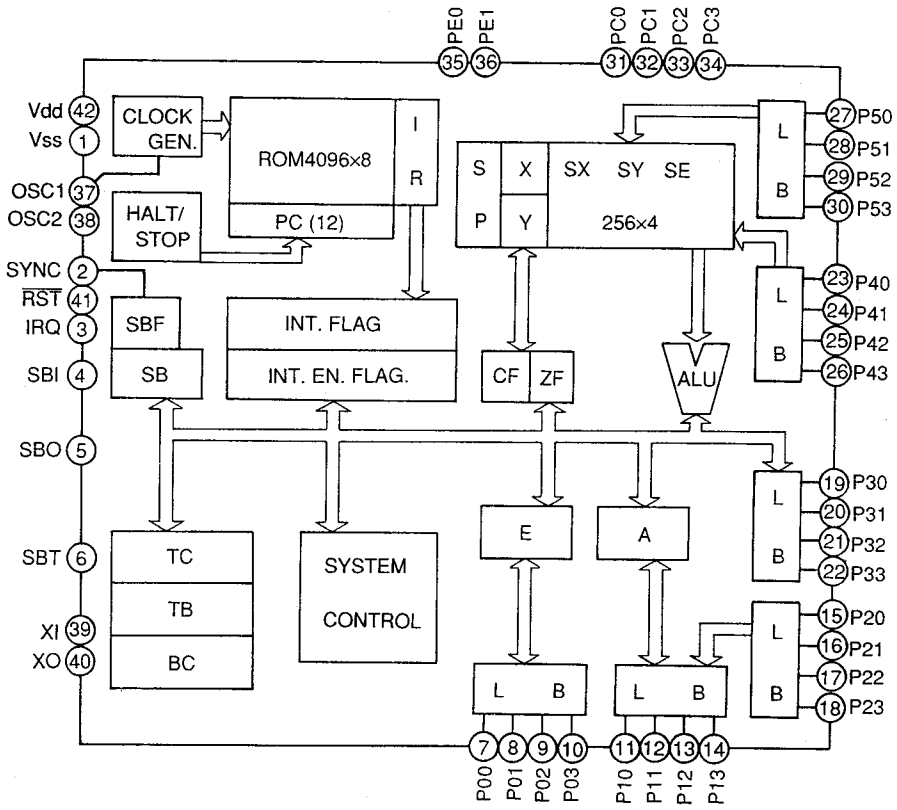
IC801, 802 : BA6229
Motor Driver



IC753 : TC4051BP



IC751 : MN15542
Logic Control Block

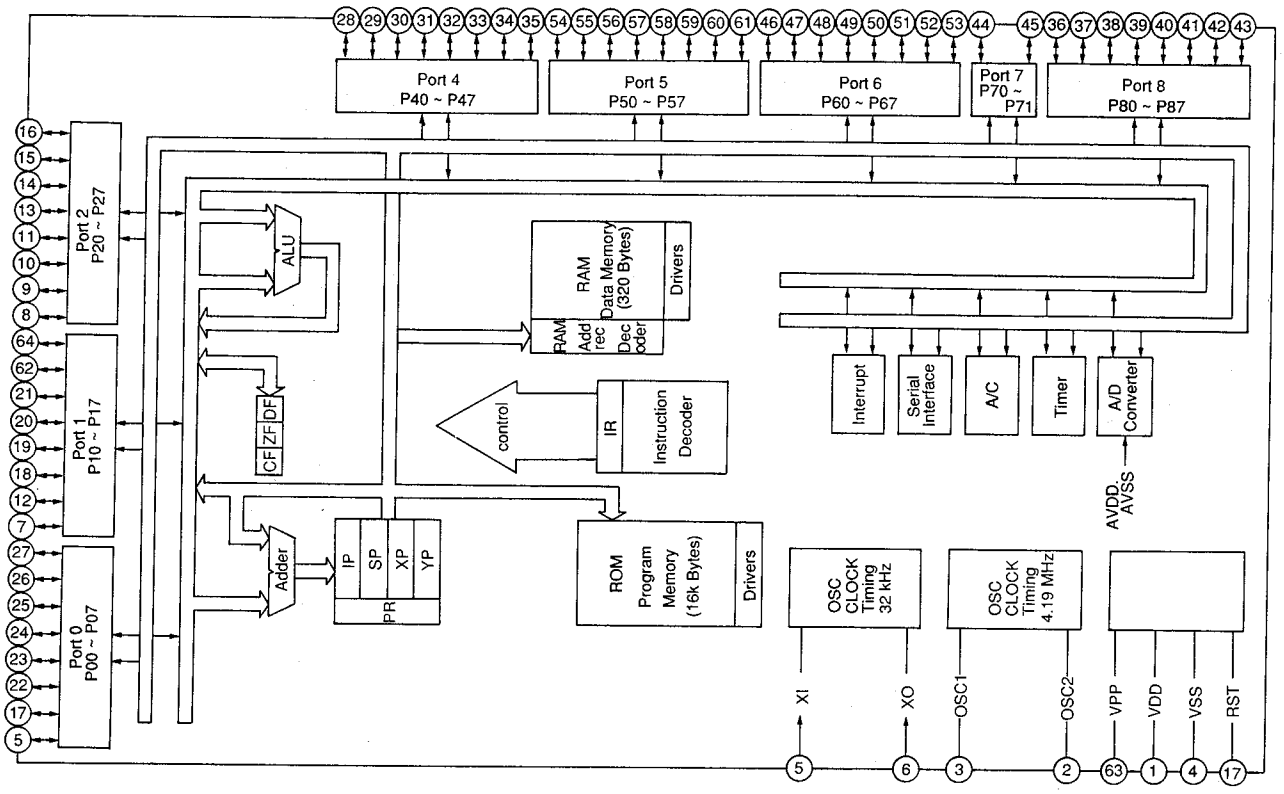


TERMINAL FUNCTIONS

NO.	Name	Functional Name	I/O	Description
1	Vss	Vss		GND
2	SYNC			Not used
3	IRQ	STB IN	I	STB input from MAIN
4	SBI	DATA IN	I	Data input from MAIN
5				
6	SBT	CLK IN/OUT	I/O	Clock input/output for data communication with SUB
7	P00	SEC-RE MUTE	O	SEC playback mute output
8	P01	SEC-REC MUTE	O	SEC REC mute output
9	P02	SEC-REC	O	SEC REC change-over output
10	P03	SEC-BIAS	O	SEC bias drive output
11	P10	PRO-PB MUTE	O	PRI playback mute output
12	P11	PRI-REC MUTE	O	PRI recording mute output
13	P12	PRI-REC	O	PRI recording mute change-over
14	P13	PRI-BIAS	O	PRI bias drive output
15	P20	PRI-RPC	O	PRI reel motor drive voltage change-over
16	P21	PRI-RM2	O	PRI reel motor reverse drive output
17	P22	PRI-RM2	O	PRI reel motor forward DRIVE output
18	P23	PRI-SOLP	O	PRI solenoid retaining power
19	P30	PRI-SOL	O	PRI solenoid trigger output
20	P31	PRI-CPM	O	PRI capstan motor drive output
21	P32	PRI-MMS	O	PRI capstan motor rpm change-over

NO.	Name	Functional Name	I/O	Description
22	P33	LINE MUTE	O	Line mute output
23	P40	SEC-RPC	O	SEC reel motor drive voltage change-over
24	P41	SEC-RM2	O	SEC reel motor reverse drive output
25	P42	SEC-RM1	O	SEC reel motor forward drive output
26	P43	SEC-SOLP	O	SEC solenoid retaining output
27	P50	SEC-SOL	O	SEC solenoid trigger output
28	P51	SEC-CPM	O	SEC capstan motor drive output
29	P52	SEC-MMS	O	SEC capstan motor rpm change-over
30	P53	HI SPD	O	EQ change-over at hight-speed copy
31	PC0	PRI-DOLBY C	O	PRI Dolby C drive output
32	PC1	PRI-DOLBY B	O	PRI Dobly B drive output
33	PC2	PRI-MPX	O	PRI MPX filter drive output
34	PC3	SEC-DOLBY C	O	SEC Dolby C drive output
35	PE0	SEC-DOLBY B	O	SEC Dolby B drive output
36	PE1	BUSY OUT	O	
37	OSC1	OSC1		Ceramic resonator connection
38	OSC2	OSC2		Transmitting frequency : 4.0 MHz
39	X1			Not used
40	X0			
41	RST	RESET	I	Reset
42	Vdd	Vdd		5V DC power connection

IC901 : MN187167
Main Controller



TERMINAL FUNCTIONS

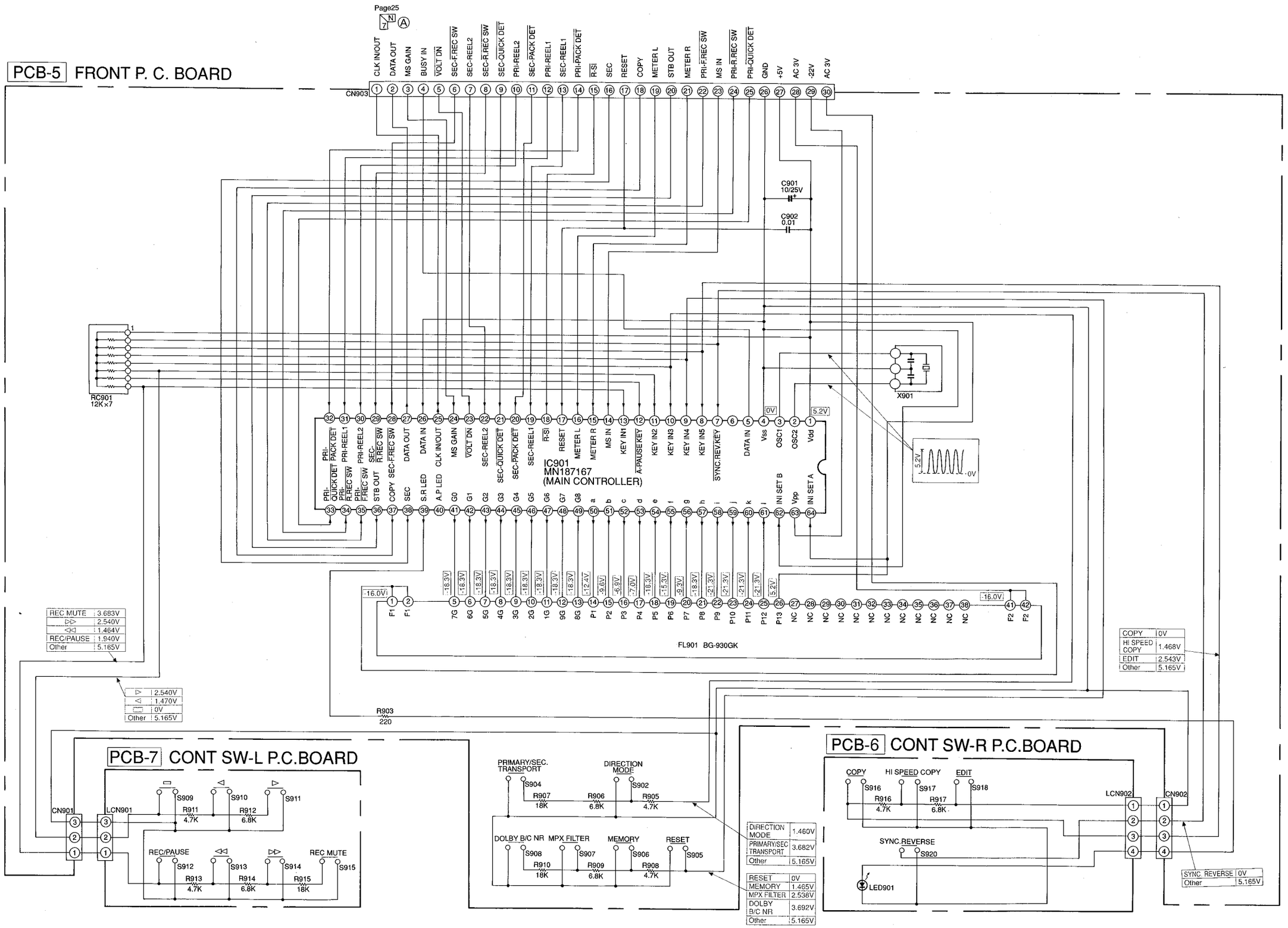
NO.	Name	Functional Name	I/O	Description
1	Vdd	Vdd		5V DC power supply
2	OSC	OSC OUT		Ceramic resonator connection Transmitting frequency : 4.0 MHz
3	OSC	OSC IN		
4	Vss	Vss		GND
5	P06	BUSY IN	I	BUSY IN
6	X0			Not used
7	P17	SYNC. REV. KEY	I	SYNC. REVERSE key input
12	P16	A-PAUSE KEY	I	AUTO PAUSE key input
8	AD7	KEY IN 5	I	Key input Judging wich key has been pressed by DC voltage detection with an A/D converter
9	AD6	KEY IN 4	I	
10	AD5	KEY IN 3	I	
11	AD4	KEY IN 2	I	
13	AD3	KEY IN 1	I	
14	AD2	MS IN	I	A/D input port for MS detection
15	AD1	METER R	I	Level meter right channel input
16	AD0	METER L	I	Level meter left channel input
17	$\overline{RST}$	$\overline{RESET}$	I	Reset
18	P15	SEC-REEL 2	I	SEC right reel pulse input
19	P14	SEC-REEL 1	I	SEC left reel pulse input
20	P13	SEC-$\overline{PACK\ DET}$	I	SEC pack detection ; L when a cassette is present
21	P12	SEC-$\overline{QUICK\ DET}$	I	SEC quick photo detection L at the leader tape position

NO.	Name	Functional Name	I/O	Description
22	P05	$\overline{R\text{-}SI}$	I	Remote control input
23	P04	VOLT-$\overline{DN}$	I	Power OFF detection ; L when OFF
24	P03	MS GAIN	I	MS amplifier gain control ; H when the gain is small
25	P02	CLK IN/OUT	I/O	Clock input/output terminal for data commumication with SUB
26	P01	DATA IN	I	Serial data input from SUB
27	P00	DATA OUT	O	Serial data output to SUB
28	P47	SEC-$\overline{F.\ REC}$	I	SEC tape front hook detection ; L when REC enabled
29	P46	SEC-$\overline{R.\ REC}$	I	SEC tape rear hook detection
30	P45	PRI-REEL 2	I	PRI right reek pulse input
31	P44	PRI-REEL 1	I	PRI left reel pulse input
32	P43	PRI-$\overline{PACK\ DET}$	I	PRI pack detection
33	P42	PRI-$\overline{QUICK\ DET}$	I	PRI quick photo detection
34	P41	PRI-$\overline{R.\ REC}$	I	PRI tape rear hook detection
35	P40	PRI-$\overline{F.\ REC}$	I	PRI tape front hook detection
36	P87	STB OUT	O	STB output to SUB
37	P86	COPY	O	H when copying from SEC to PRI
38	P85	SEC	O	Voice output to LINE OUT and MS amplifier: H when SEC output and L when PRI output

NO.	Name	Functional Name	I/O	Description
39	P84	S. R. LED	O	H when SYNC. REVERSE LED is on
40	P83	A. P. LED	O	H when AUTO PAUSE LED is on
41	P82	G0	O	FL display grid drive output
42	P81	G1	O	
43	P80	G2	O	
44	P71	G3	O	
45	P70	G4	O	
46	P67	G5	O	
47	P66	G6	O	
48	P65	G7	O	
49	P64	G8	O	
50	P63	a	O	FL display anode drive output
51	P62	b	O	
52	P61	c	O	
53	P60	d	O	
54	P57	e	O	
55	P56	f	O	
56	P55	g	O	
57	P54	h	O	
58	P53	i	O	
59	P52	j	O	
60	P51	k	O	
61	P50	l	O	
62	P11	INI SET B	I	Initial setting SW B connection
63	Vpp	Vpp		Negative voltage load terminal for FL
64	P10	INI SET A		Initial setting SW A connection

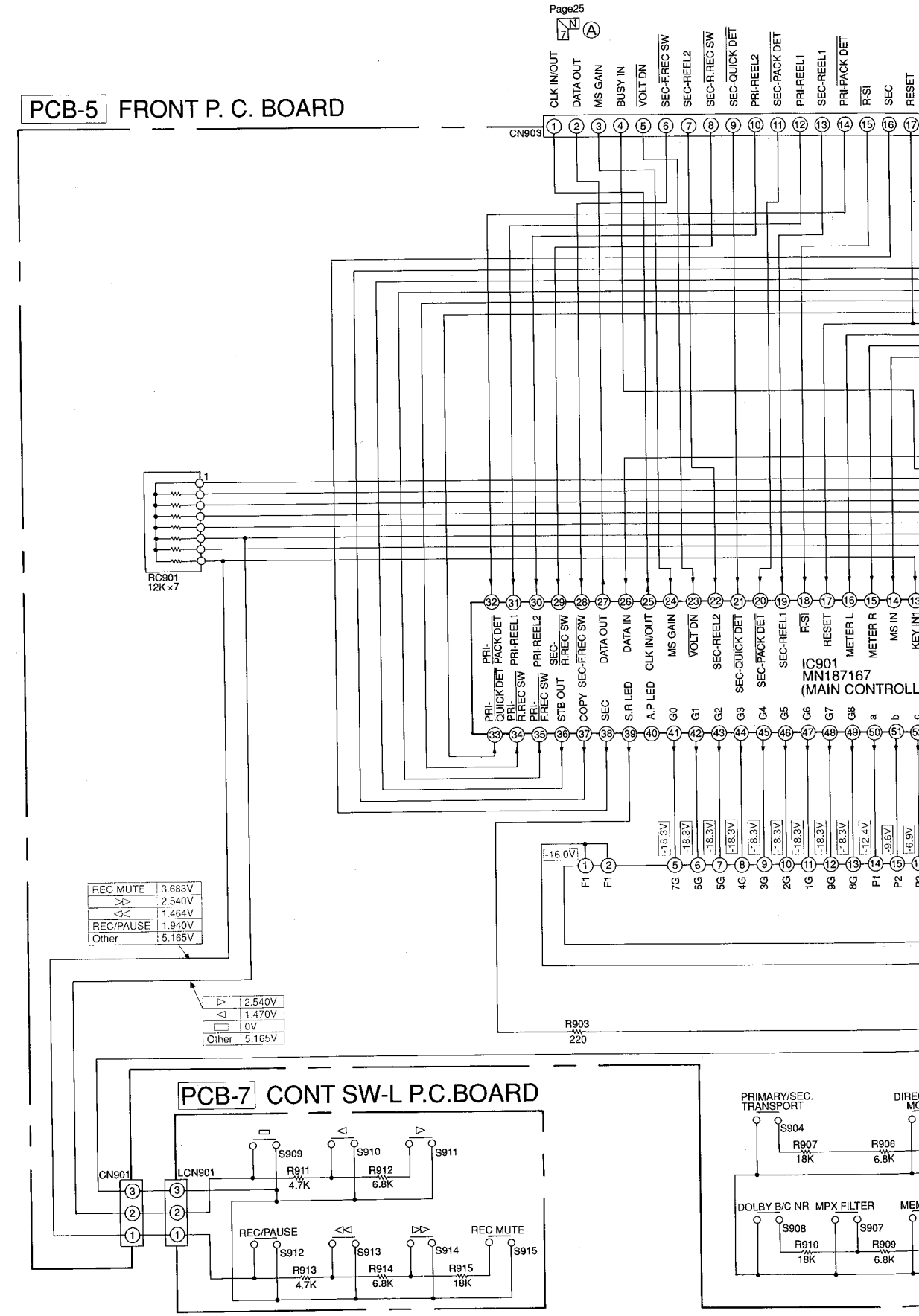
SCHEMATIC DIAGRAM (1)

NOTES:
1. ALL RESISTANCES VALUES ARE IN Ω. kΩ = 1000Ω, MΩ = 1000kΩ.
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTERWISE NOTED. P = μμF.
4. V : DC VOLTAGE AT NO SIGNAL.

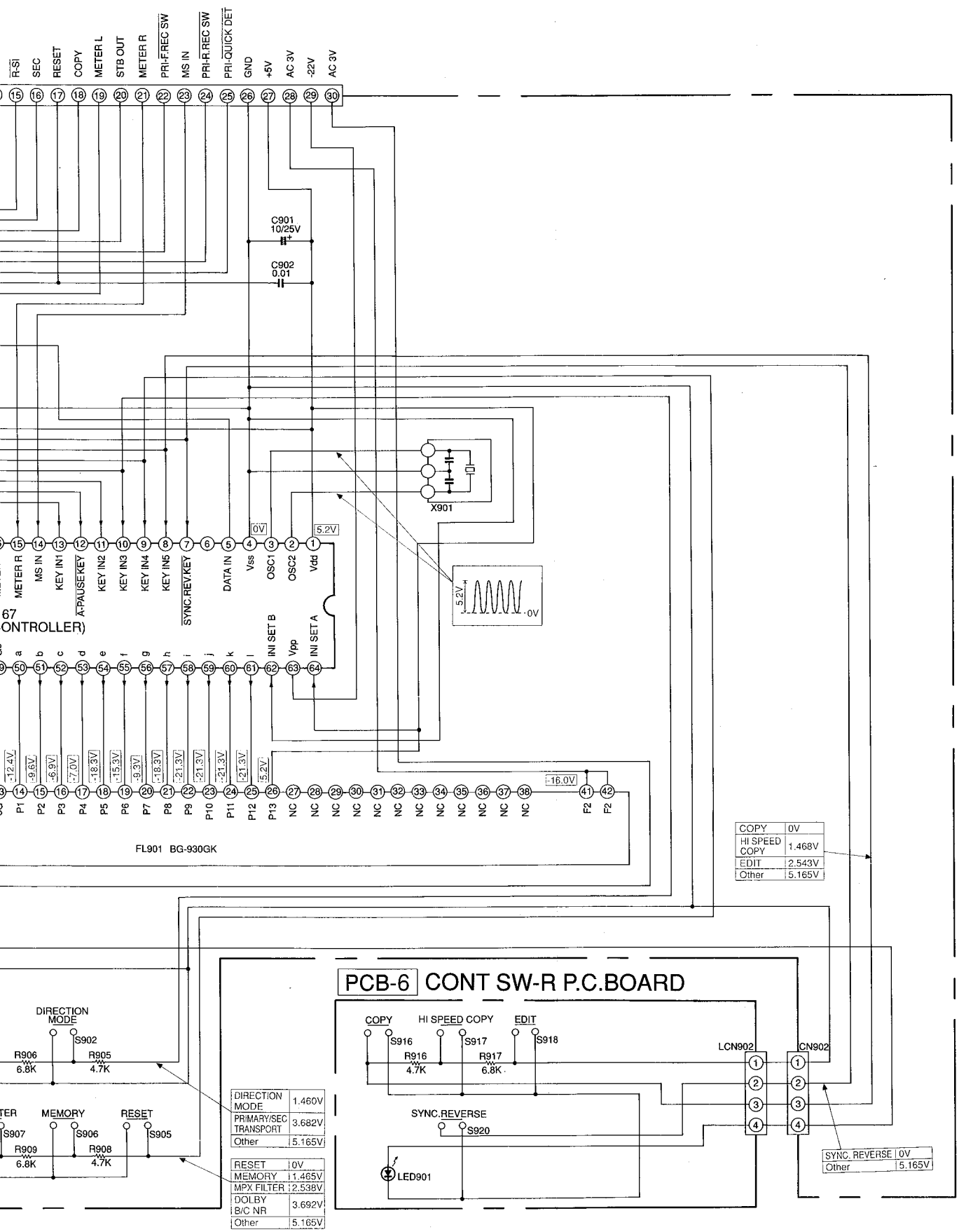


SCHEMATIC DIAGRAM (1)

NOTES:
1. ALL RESISTANCES VALUES ARE IN Ω. kΩ = 1000Ω, MΩ = 1000kΩ.
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTERWISE NOTED. P = μμF.
4. V : DC VOLTAGE AT NO SIGNAL.

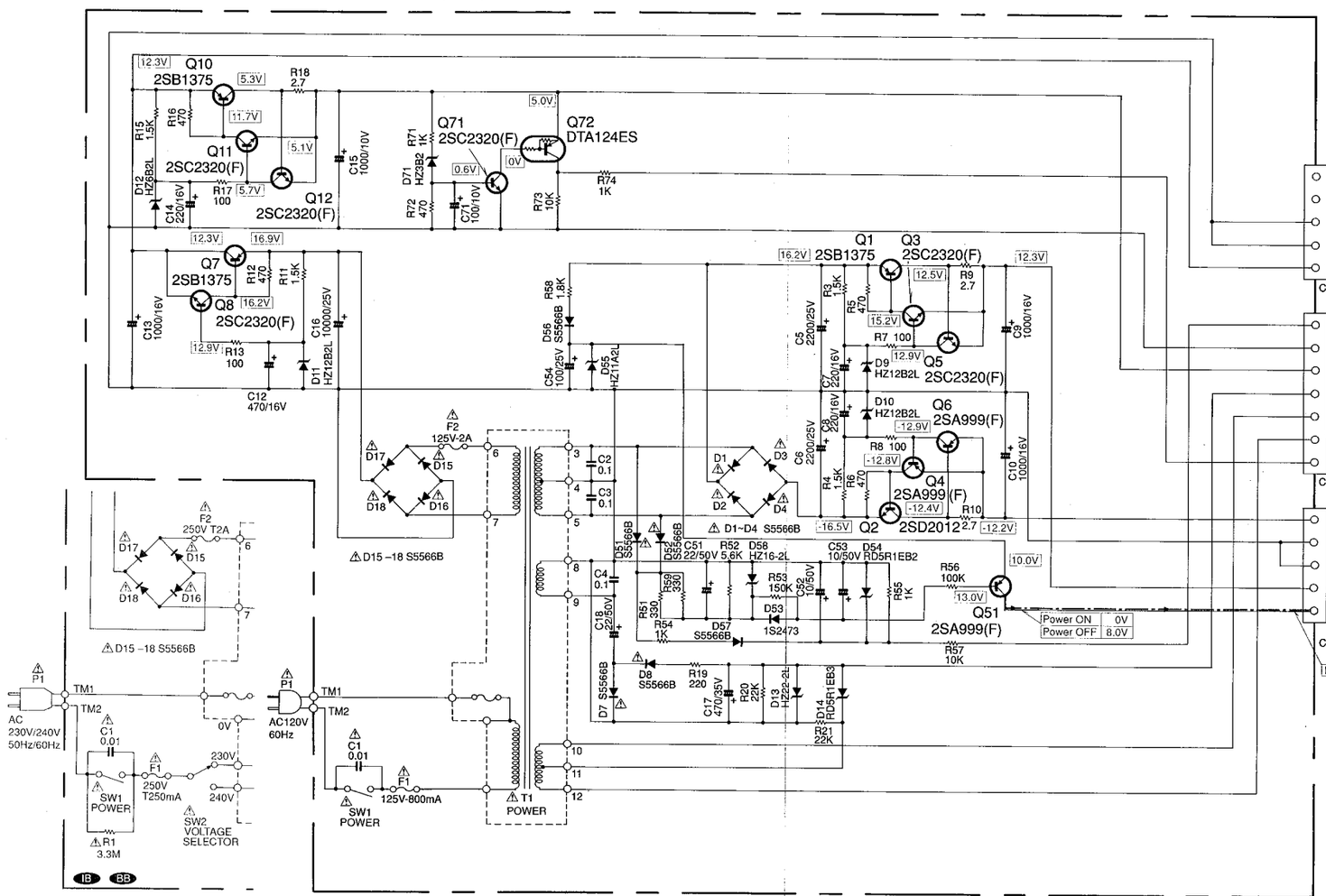


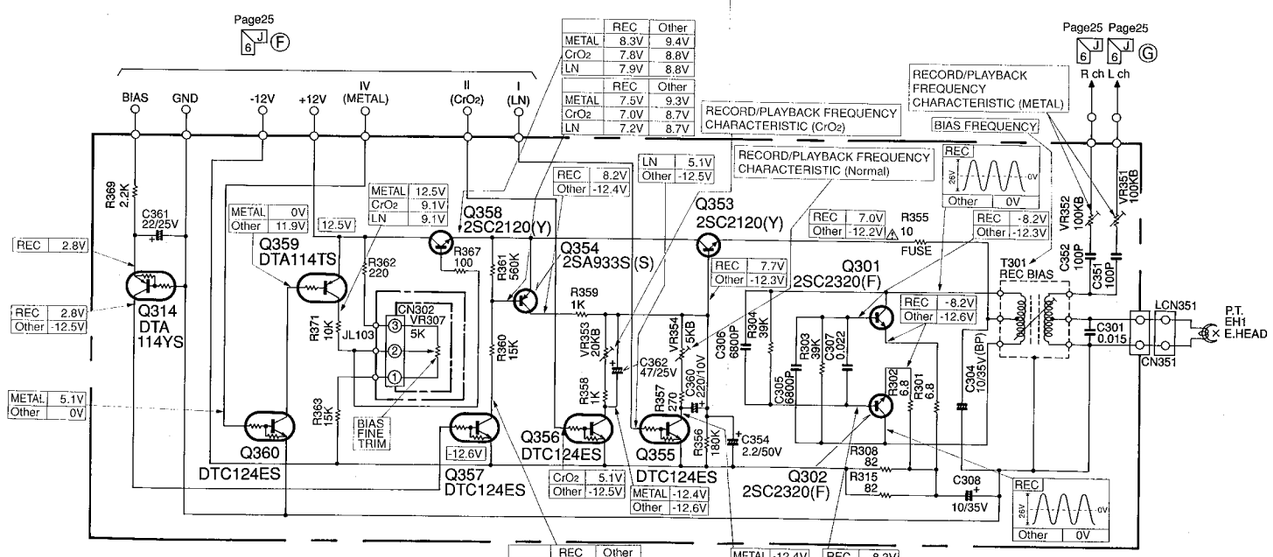
F G H I J


R-SI
SEC
RESET
COPY
METER L
STB OUT
METER R
PRI-F.REC SW
MS IN
PRI-R.REC SW
PRI-QUICK DET
GND
+5V
AC 3V
-22V
AC 3V
C901 10/25V
C902 0.01
X901
0V
5.2V
Vss
OSC1
OSC2
Vdd
DATA IN
KEY IN5
KEY IN4
KEY IN3
KEY IN2
A-PAUSE KEY
KEY IN1
MS IN
METER R
SYNC.REV.KEY
INI SET B
Vpp
INI SET A
-12.4V
-9.6V
-6.9V
-7.0V
-18.3V
-15.3V
-9.3V
-18.3V
-21.3V
-21.3V
-21.3V
-21.3V
5.2V
-16.0V
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
NC
F2
FL901 BG-930GK
COPY 0V
HI SPEED COPY 1.468V
EDIT 2.543V
Other 5.165V
PCB-6 CONT SW-R P.C.BOARD
DIRECTION MODE
S902
R906 6.8K
R905 4.7K
MEMORY
RESET
S907
S906
S905
R909 6.8K
R908 4.7K
DIRECTION MODE 1.460V
PRIMARY/SEC TRANSPORT 3.682V
Other 5.165V
RESET 0V
MEMORY 1.465V
MPX FILTER 2.538V
DOLBY B/C NR 3.692V
Other 5.165V
COPY
HI SPEED COPY
EDIT
S916
S917
S918
R916 4.7K
R917 6.8K
SYNC.REVERSE
S920
LED901
LCN902
CN902
SYNC. REVERSE 0V
Other 5.165V

SCHEMATIC DIAGRAM (2)

PCB-4 POWER P. C. BOARD (1/2)





	REC	Other
METAL	8.3V	9.4V
CrO2	7.8V	8.8V
LN	7.9V	8.8V

	REC	Other
METAL	7.5V	9.3V
CrO2	7.0V	8.7V
LN	7.2V	8.7V

	REC	Other
METAL	-12.5V	9.3V
CrO2	-12.5V	8.7V
LN	-12.5V	8.7V

PCB-1 MAIN P. C. BOARD (2/2)

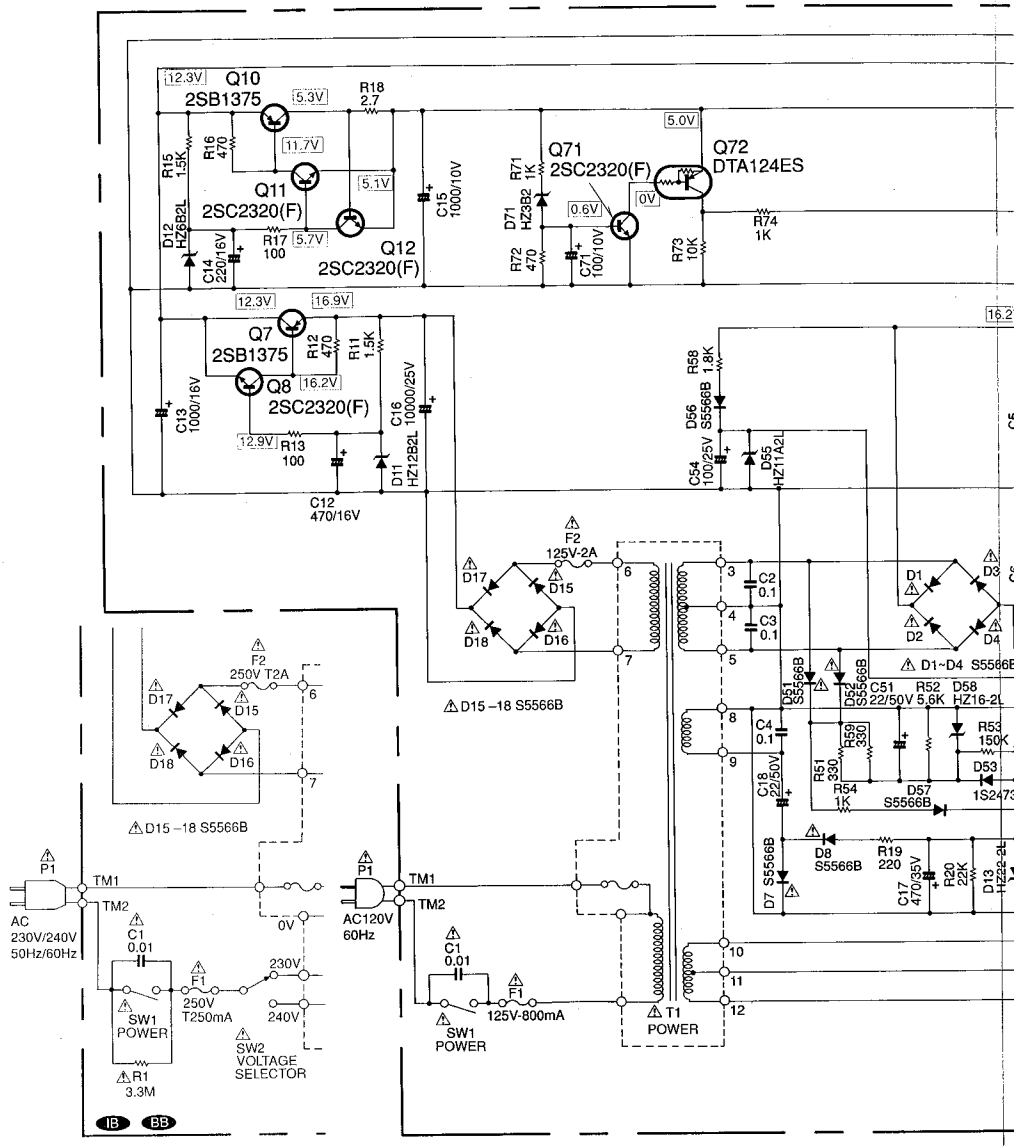
Type	R1	R2
DTC114YS	10K	47K
DTC124ES	22K	22K

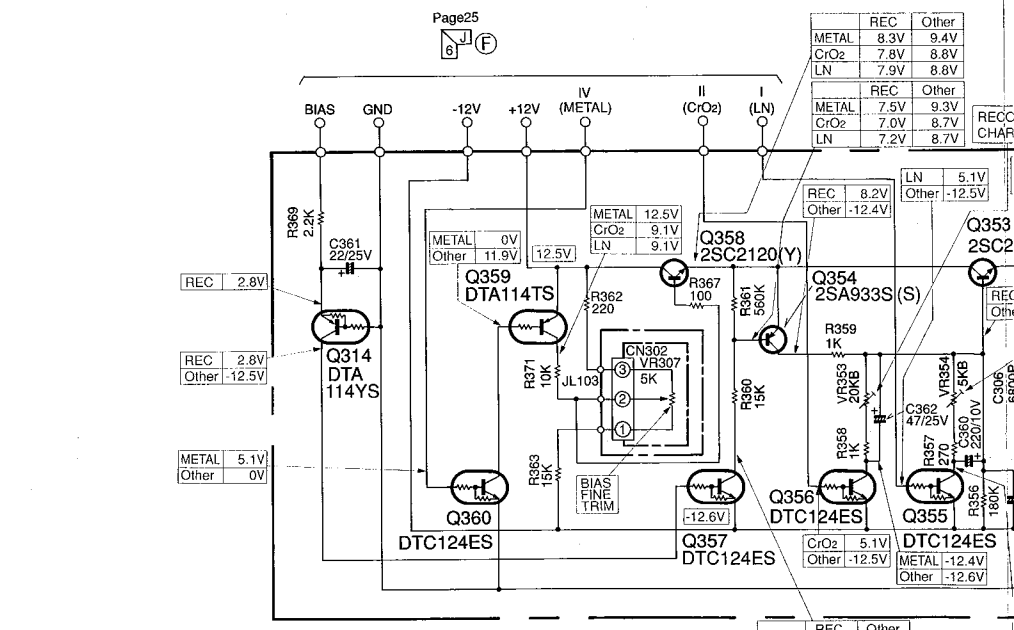
Type	R1	R2
DTA114YS	10K	47K
DTA124ES	22K	22K
DTA143ES	4.7K	4.7K

Type	R1
DTC114TS	10K

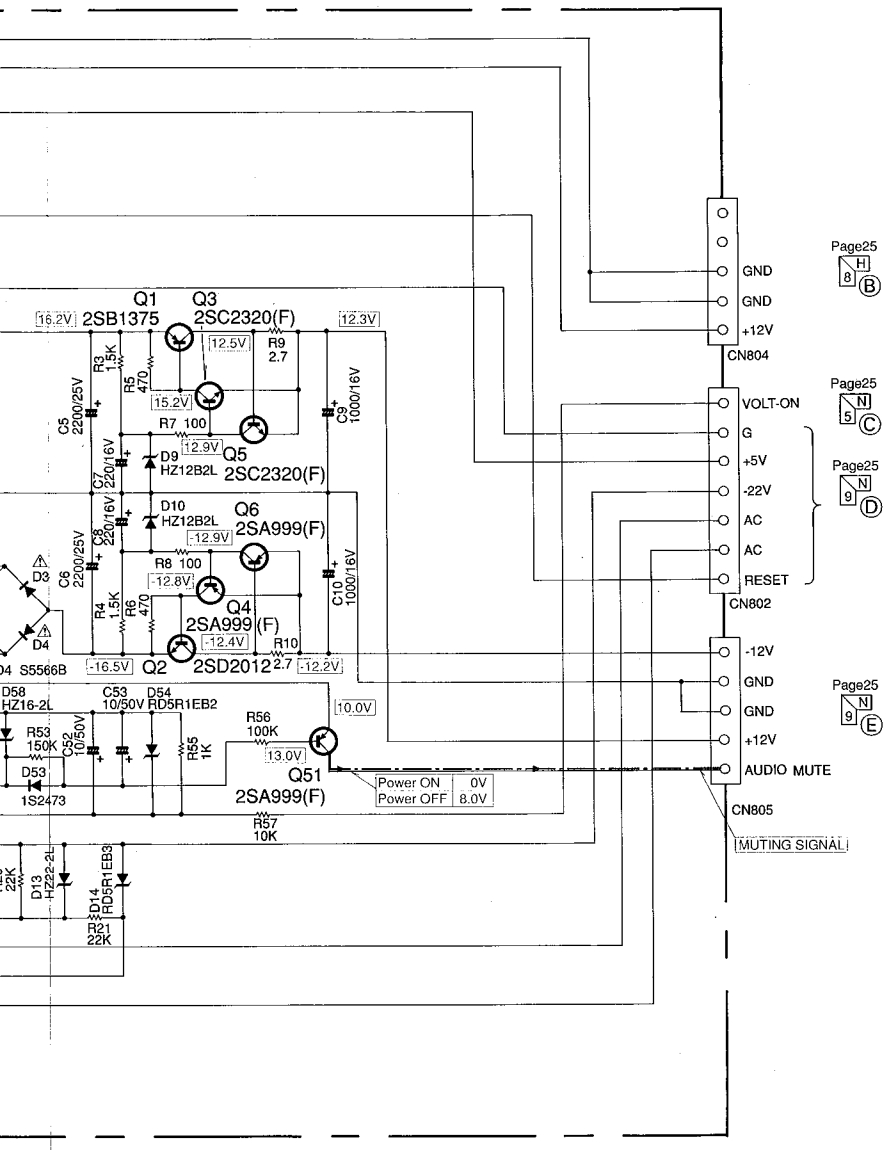
SCHEMATIC DIAGRAM (2)

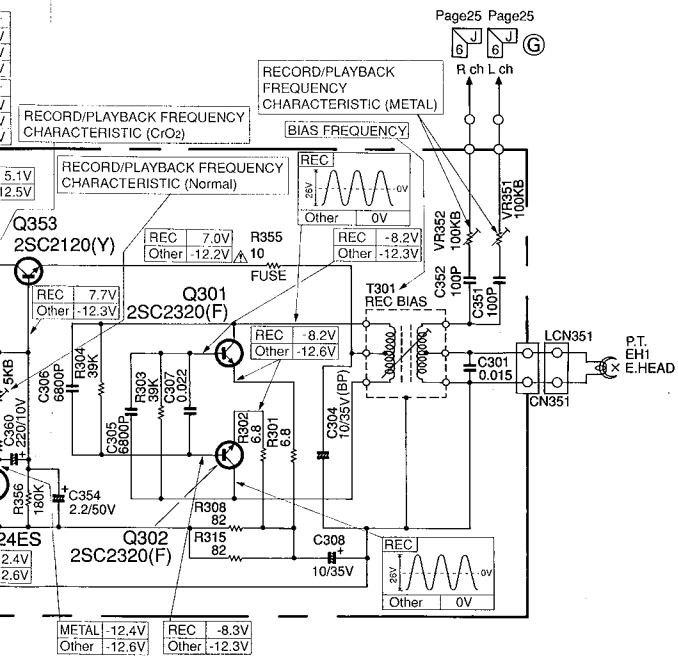
PCB-4 POWER P. C. BOARD (1/2)

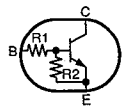




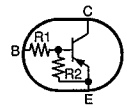
PCB-1 MAIN P. C. BOARD (2/2)



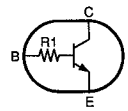




Type	R1	R2
DTC114YS	10K	47K
DTC124ES	22K	22K



Type	R1	R2
DTA114YS	10K	47K
DTA124ES	22K	22K
DTA143ES	4.7K	4.7K



Type	R1
DTC114TS	10K

SCHEMATIC DIAGRAM (3)

PCB-1 MAIN P. C. BOARD (1/2)

PCB-2 VR P. C. BOARD

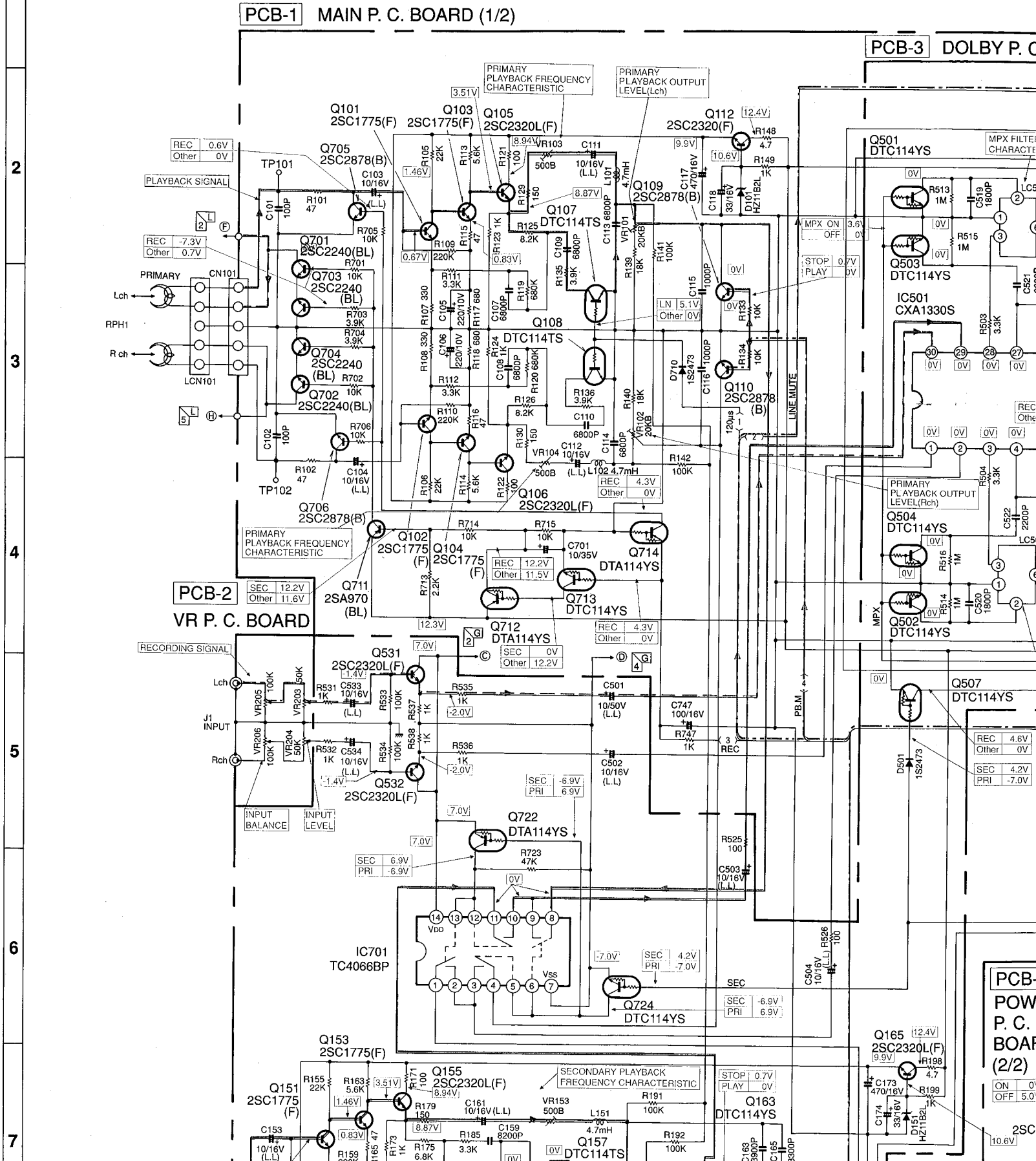
PCB-3 DOLBY P. C. BOARD

PCB-4 POWER P. C. BOARD (2/2)

PRIMARY P. C. BOARD

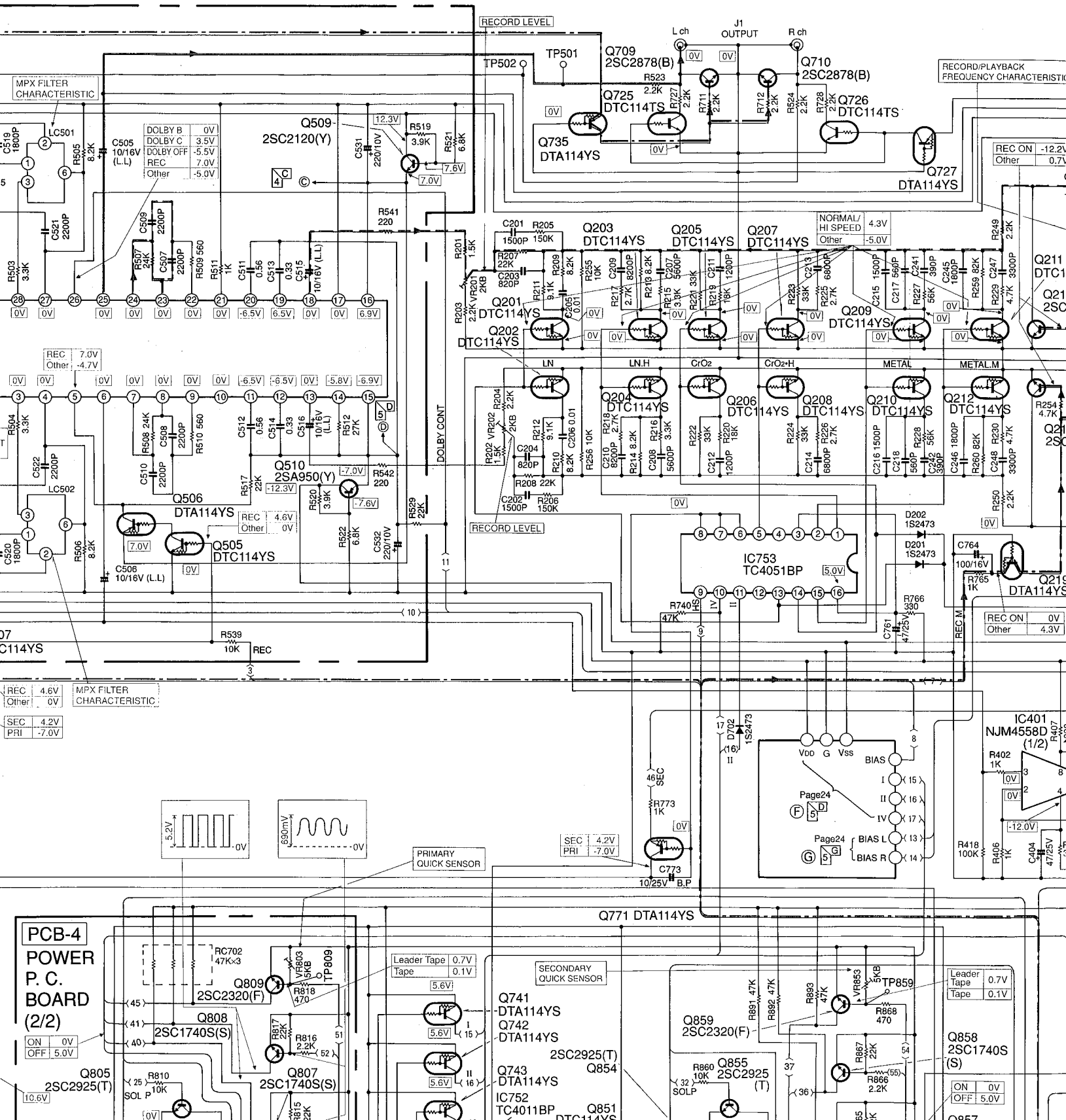
SECONDARY P. C. BOARD

SCHEMATIC DIAGRAM (3)

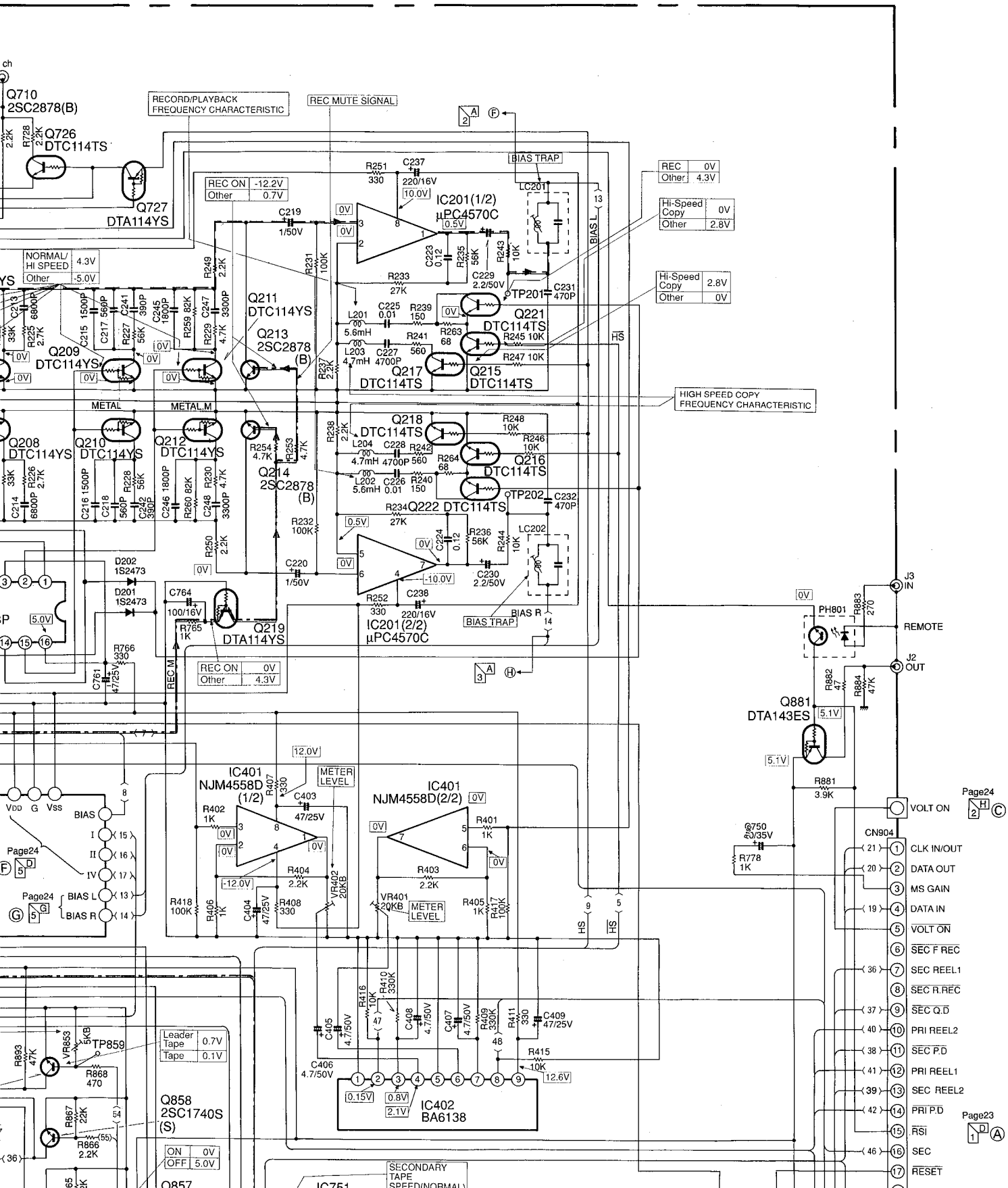


F G H I J

LBY P. C. BOARD



J	K	L	M	N

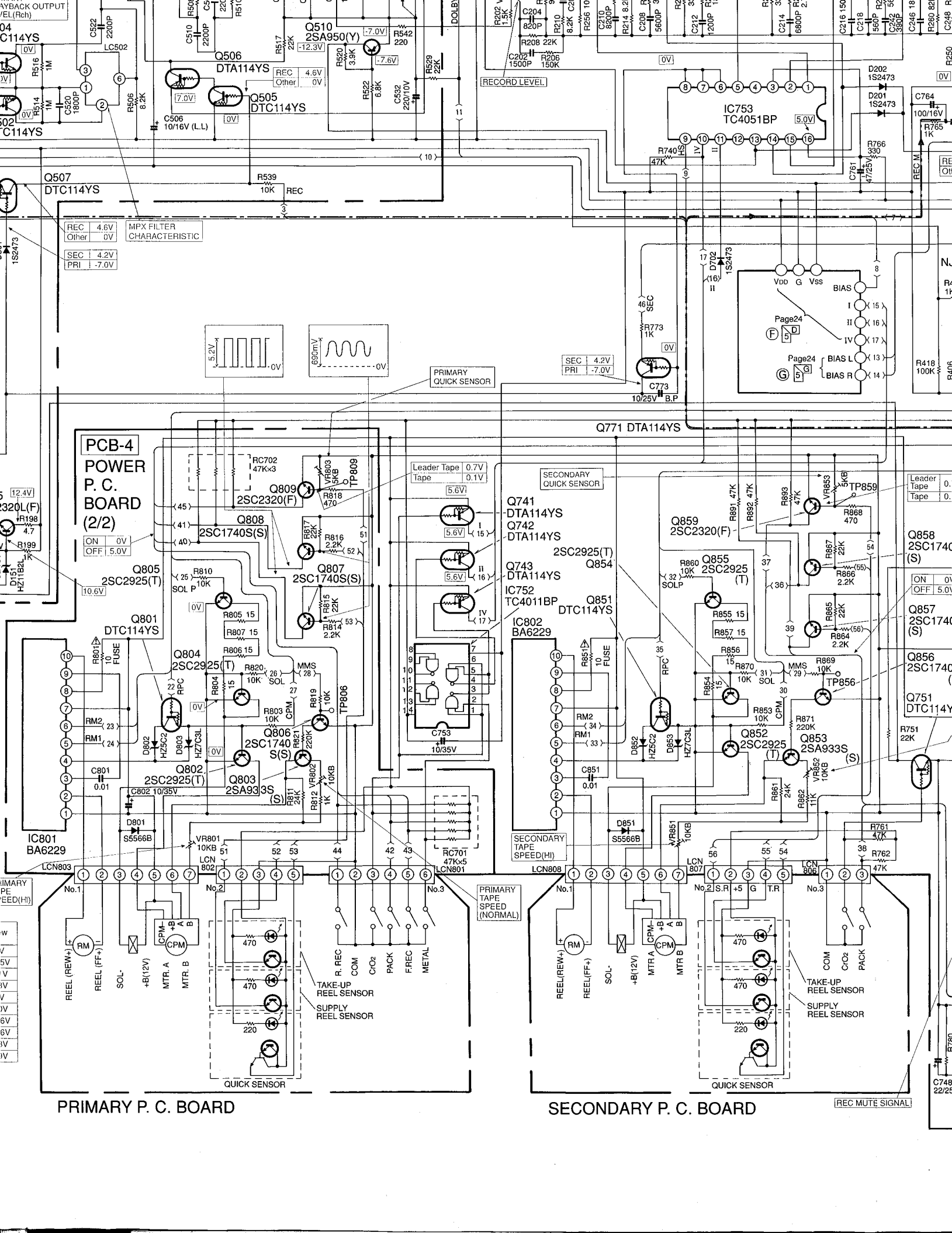

Q710
2SC2878(B)
Q726
DTC114TS
Q727
DTA114YS
RECORD/PLAYBACK
FREQUENCY CHARACTERISTIC
REC MUTE SIGNAL
REC ON -12.2V
Other 0.7V
IC201(1/2)
µPC4570C
IC201(2/2)
µPC4570C
BIAS TRAP
REC 0V
Other 4.3V
Hi-Speed Copy 0V
Other 2.8V
Hi-Speed Copy 2.8V
Other 0V
NORMAL/ HI SPEED 4.3V
Other -5.0V
Q209
DTC114YS
Q211
DTC114YS
Q213
2SC2878 (B)
Q221
DTC114TS
Q217
DTC114TS
Q215
DTC114TS
HIGH SPEED COPY
FREQUENCY CHARACTERISTIC
METAL
METAL M
Q208
DTC114YS
Q210
DTC114YS
Q212
DTC114YS
Q214
2SC2878 (B)
Q218
DTC114TS
Q216
DTC114TS
Q222 DTC114TS
Q219
DTA114YS
REC ON 0V
Other 4.3V
REC M
IC401
NJM4558D (1/2)
IC401
NJM4558D(2/2)
METER LEVEL
PH801
REMOTE
J3 IN
J2 OUT
Q881
DTA143ES
VOLT ON
CN904
CLK IN/OUT
DATA OUT
MS GAIN
DATA IN
VOLT ON
SEC F REC
SEC REEL1
SEC R.REC
SEC Q.D
PRI REEL2
SEC P.D
PRI REEL1
SEC REEL2
PRI P.D
RSI
SEC
RESET
Page24
Page23
Leader Tape 0.7V
Tape 0.1V
TP859
Q858
2SC1740S (S)
ON 0V
OFF 5.0V
IC402
BA6138
SECONDARY TAPE SPEED(NORMAL)
IC751

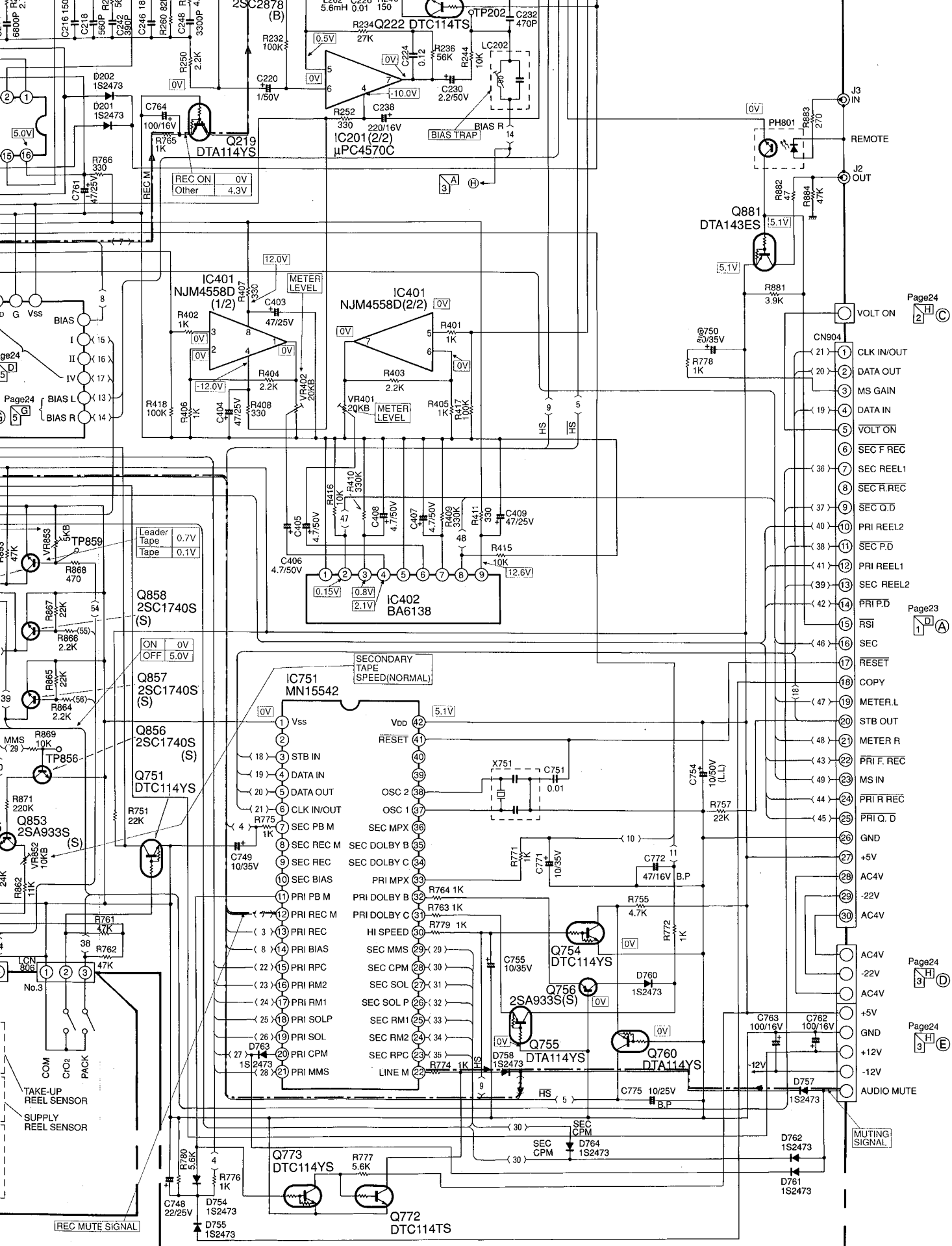
IC752

PIN NO.	TYPE		PIN NO.	TYPE	
1	I	0V	5	I	0V
	II/IV	5.6V		II/IV	5.6V
2	I/II	5.6V	6	I/II	0V
	IV	0V		IV	5.6V
3	I/IV	5.6V	7	0V	
	II	0V	8-13	—	
4	I/II	5.6V	14	5.6V	
	IV	0V			

IC801,IC802

PIN NO.	Stop	Play	FF	Rew
1	0V	0V	0V	0V
2	0V	4.9V	7.9V	0.65V
3	0V	6.8V	9.8V	0.1V
4	0.4V	4.7V	7.8V	7.8V
5	0V	5.0V	5.0V	0V
6	0V	0V	0V	5.0V
7	12.6V	12.6V	12.6V	12.6V
8	12.6V	12.6V	12.6V	12.6V
9	0V	0.1V	0.1V	9.8V
10	0V	0.7V	0.65V	7.9V


PCB-4
POWER
P. C.
BOARD
(2/2)
PRIMARY P. C. BOARD
SECONDARY P. C. BOARD
IC801
BA6229
IC802
BA6229
IC752
TC4011BP
IC753
TC4051BP
Q801
DTC114YS
Q802
2SC2925(T)
Q803
2SA933S
(S)
Q804
2SC2925(T)
Q805
2SC2925(T)
Q806
2SC1740
S(S)
Q807
2SC1740S(S)
Q808
2SC1740S(S)
Q809
2SC2320(F)
Q506
DTA114YS
Q505
DTC114YS
Q507
DTC114YS
Q510
2SA950(Y)
Q741
DTA114YS
Q742
DTA114YS
Q743
DTA114YS
Q771 DTA114YS
Q851
DTC114YS
Q852
2SC2925
(T)
Q853
2SA933S
(S)
Q854
2SC2925(T)
Q855
2SC2925
(T)
Q859
2SC2320(F)
PRIMARY
QUICK SENSOR
SECONDARY
QUICK SENSOR
PRIMARY
TAPE
SPEED
(NORMAL)
SECONDARY
TAPE
SPEED(HI)
RECORD LEVEL
MPX FILTER
CHARACTERISTIC
TAKE-UP
REEL SENSOR
SUPPLY
REEL SENSOR
QUICK SENSOR
REC MUTE SIGNAL
REEL (REW+)
REEL (FF+)
SOL-
+B(12V)
MTR A
MTR B
R. REC
COM
CrO2
PACK
F.REC
METAL
RC701
47K×5
RC702
47K×3
TP809
TP806
TP856
TP859
LCN803
LCN802
LCN801
LCN808
LCN807
LCN806
REC 4.6V
Other 0V
SEC 4.2V
PRI -7.0V
ON 0V
OFF 5.0V
Leader Tape 0.7V
Tape 0.1V
Page24
BIAS L
BIAS R
BIAS
VDD G VSS


IC401
NJM4558D
(1/2)
IC401
NJM4558D(2/2)
IC751
MN15542
IC402
BA6138
IC201(2/2)
µPC4570C
Q219
DTA114YS
Q222 DTC114TS
Q881
DTA143ES
Q858
2SC1740S
(S)
Q857
2SC1740S
(S)
Q856
2SC1740S
(S)
Q751
DTC114YS
Q853
2SA933S
(S)
Q754
DTC114YS
Q755
DTA114YS
Q756
2SA933S(S)
Q760
DTA114YS
Q773
DTC114YS
Q772
DTC114TS
REC ON 0V
Other 4.3V
Leader Tape 0.7V
Tape 0.1V
ON 0V
OFF 5.0V
SECONDARY TAPE SPEED(NORMAL)
METER LEVEL
BIAS TRAP
REMOTE
VOLT ON
MUTING SIGNAL
REC MUTE SIGNAL
TAKE-UP REEL SENSOR
SUPPLY REEL SENSOR
CN904
CLK IN/OUT
DATA OUT
MS GAIN
DATA IN
VOLT ON
SEC F REC
SEC REEL1
SEC R.REC
SEC Q.D
PRI REEL2
SEC P.D
PRI REEL1
SEC REEL2
PRI P.D
RSI
SEC
RESET
COPY
METER.L
STB OUT
METER R
PRI F. REC
MS IN
PRI R REC
PRI Q. D
GND
+5V
AC4V
-22V
AC4V
AC4V
-22V
AC4V
+5V
GND
+12V
-12V
AUDIO MUTE
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